The Builder.

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MANY matters press upon us for consideration. Amongst them the late fearful calamity in the Theatre Royal at Glasgow, where nearly 70 persons lost their lives in the crush produced by an alarm of fire, must not be passed by without comment. Several questions of great importance, and often discussed in our pages, are involved,—namely, the defective arrangement of the stairs and accesses in many of our theatres, the importance of obtaining a cheap and efficient mode of fire-proof construction, and the necessity, or, otherwise, for Government supervision.

At the beginning of the year, on the occurrence of a serious accident at the Victoria Theatre, we drew attention to the condition and arrangement of the stairs, lobbies, and modes of exit in several of our theatres, and said it should reconcile parties to the control over staircases and passages given to the official referees by the Buildings Act; and that, as the clause only applied to new and altered buildings, it was a question whether it ought not to be made to apply to existing structures, and extend to obtaining for the public the means of ready egress.

With ourselves this is no longer a question; some step, with the same end in view, is imperatively demanded, and we suggest that the Government should, as a first move, name three or more competent persons (the referees, if their time be not too much occupied), to examine and report on the metropolitan theatres, concert-rooms, and other places of public resort, with reference to the means afforded in them for safe and rapid egress.

To managers themselves, and the proprietors of these structures, we would say, do not wait for this, but set yourselves to work to render the approaches fire-proof, so far as possible, and the means of egress safe, ample, and commodious. Let it be well understood by the public, that this has been done, and the chance of panic, and of tumultuous rushing to escape on the slightest alarm, by which the mischief is always brought about, will be materially lessened.

The sense of security felt when it is known, as in the Royal Italian Opera House, Covent Garden, constructed under the provisions of the Act, that the staircases from the highest part of the building, and the accesses, are indestructible, can scarcely be overlooked. We mention the Covent Garden Opera House, not as being the *only* house where a certain degree of security in this respect may be enjoyed, but as a result of the compulsory clause in the Buildings Act.*

Were a fire to occur in some of our theatres, or even an alarm to be given sufficient to lead the audience to endeavour, panic stricken, to escape, the result would be fearful.

"We will venture to say," remarks the *Examiner*, taking our view of the subject, "that there is not a theatre in London which at this moment would bear inspection, with a view to the safety of all its avenues, passages, and staircases. There is not one in which, in the event of fire or the false alarm of it, in some one quarter, or more than one, there would not be a jam of crushed and smothered bodies like that of Glasgow, but probably on a greater scale of destruction. But the Legislation which so sagely and carefully levels the powers of the law against penny theatres and unlicensed performances, takes no precautions to guard against this frightful mischief. There is an authority to prevent the performance of a play in which a word offensive to morals or decorum may be found, but there is none to prevent performances in a theatre so defectively constructed, that the false alarm of any drunkard, fool, or pickpocket may cause the destruction of masses of people inextricably jammed and pounded together, and perishing more cruelly than the sufferers in the black hole at Calcutta."

Irrespective of the materials composing the stairs and accesses, a careful revision should be made of the barriers and other obstructions on the stairs and in the passages. The doors, if not made to swing both ways, should all open outwards.

We have received from Glasgow a plan of the staircase wherein the disaster occurred. The stairs vary in width from 4 feet to about 4 feet 4 inches. One half the staircase forms a right angle with the other, and at the junction, where there are winders, there was a barrier, 5½ feet high, and 2 feet 3 inches wide, opening outwards, but held in its place by an iron bar attached to the wall, and hooking into a staple in the door, so as to narrow the passage to 23 inches. Lower down, and nearer to the entrance from the street, was a pair of folding doors, each 21 inches wide. The one to the right (going down stairs) opened outwards, the other half opened the reverse way, and this was kept closed by a strong bar hooking into a staple in the door, so as to prevent any large number of persons from passing through at one time. Judging from the statements before us, it seems it was at these barriers that the mischief was done, and persons on the spot think the same thing. "On looking at the matter coolly," says the *North British Mail*, "at this distance of time, and after a careful examination of the premises, there can be no doubt that, to the obstructions offered by the two fixed doors in the stair, the awful catastrophe may be attributed. Of course, had there been no panic, the narrow passages left open past the doors would have been sufficient to permit the leisurely and regular exit of the whole audience. But the possibility of a panic should always be provided for in such buildings, and the arrangements of the manager framed with a view of obviating such an occurrence should it happen."

There should be no *fixed* obstructions in the stairs or passages of a theatre.

Most of our readers have doubtless learnt from the daily papers the very trivial cause of the panic, but we will nevertheless repeat it in few words for a purpose.

Round the front of the upper gallery are several large crystal globes, with a gas light in the centre of each. The lights on each side are supplied with gas through a block-tin tube of about half-an-inch in diameter, connected with an iron gas-pipe at the end of the gallery—that is, the globes on each side of the gallery are supplied from separate pipes. Had this not been fortunately so, the flame would have extended each way and over double the distance. In this half-inch pipe a leak took place, the escaped gas found its way into the space formed by the framing, and a piece of lighted paper thrown down by a boy who had used it to light a pipe, ignited the escaping gas. The result was that the flame soon heated the pipe to the melting point, and the aperture gradually enlarged, until, in a few seconds, a portion of the *pipe was entirely melted away*, when the inflamed gas would issue with the full volume and force of a pipe of that diameter. The pipe continued thus to melt away gradually, and the ascending flame struck against the boarding forming the front of the gallery. A carpenter extinguished the flame by squeezing up the pipe with his blue bonnet, and all danger was thought over, when, from some unexplained cause, the panic occurred and the disaster followed.

Now, it was a curious coincidence that, on the morning of the day on which the accident occurred, a letter appeared in the *Glasgow Citizen*, from our correspondent Mr. Wylson, on various defects in construction which increase the chances of conflagrations,* which contained the following paragraph:—"One more fire-raiser, and I have done: namely, *composition and block-tin gas-tubing*,—which I hope 1850 will see an end of. The relative costs of composition tube (*i. e.* old lead, with a few old solder joints), block-tin tube, and wrought-iron tube, are about as 2, 3, and 4; hence the inducement to adhere to the two former; but the first is worthless for horizontal work, being soft and liable to sag between its bearings, and hold water; and both melt readily; and here is the danger. When a flame reaches the tube, it melts—the gas is ignited—and away it travels, burning and melting, behind lathing, up hollow partitions, over ceilings, through roofs, and only ceasing when its metal is exhausted, leaving the gas flaring at its source—the main."

It might really be thought that this was written after the occurrence, instead of before it, and should serve as a proof to Mr. Wylson's fellow citizens of his correctness and foresight.

It is a mercy that we have not to record a

* Some few alterations are being made in the Italian Opera House ready for the coming season, with a view to afford additional accommodation to visiters. The lower gallery, known as the box stalls, has been formed into boxes, and the corridor, heretofore cut off on this floor, continued all round the house. The amphitheatre has been increased by forming two rows of seats on both sides of the house in lieu of the top tier of boxes. Not content with having one of the best houses in London for seeing and hearing in, the proprietors have thought desirable to increase for its visiters the facility of *being* seen; and have accordingly cut down the fronts of all the boxes to the extent of several inches; the same ornaments are replaced, and are thus necessarily brought closer together. What effect the alteration will have on the general appearance of the house remains to be seen.

* "If we cannot put an end to all fire insurance, by adopting those principles of construction which render buildings completely incombustible, there are yet improvements on ordinary practice which may be effected at little extra cost, and the omission of which I would fain see building proprietors entirely set their faces against. For example, there is an item in carpenters' accounts in Glasgow, 'safe lintles' by name—mark it well—which are wooden lintles laid over the inner portion of window and door openings, and carrying rubble masonry upon them; there is also a universal practice of inserting the ends of every tier of joists into the walls, resting on a thin board half through their thickness. Now, it is palpable that the walls of a building erected of stone or brick, when a fire does occur in it, and its combustible contents are consumed, ought to be found after about as good as they were before the fire, it being only necessary to reinstate the floors, roof, and finishings; yet, by the use of 'safe lintles,' and by catacombing, and nearly cutting the walls across at every floor level, the necessary consequence of a thorough *gutting* by fire is, that the very walls themselves are reduced to ruins, and the loss thus increased far beyond what might have been the limit; whereas, by the use of proper stone arches, and laying the joists longitudinally instead of transversely, carried by beams which have cilled and lintled openings provided for them, or by inserting an iron socket for every joist laid in the ordinary way, such extra loss might have been prevented; the latter mode, however, has still the objection that the burning joists act with a powerful leverage in falling, and strain and shatter the walls accordingly." * * * *
"Another source of conflagrations is the practice of inserting into the masonry of chimney-breasts the wooden plugs to which the lath-strapping is affixed. The holes for these "dooks," as they are called by workmen, frequently penetrate to the flue, and the plug then offers itself as a conductor of fire from the chimney to the lathing and straps inside. It is a very laudable custom to give the wall at that part a coat of plaster between the straps, to prevent fire coming through the beds and joints of the masonry, which are narrow there; but this is not sufficient; the dooks should disappear, and iron hold-fasts take their place. Could hollow partitions, and hollow spaces behind lathing on walls, be done away with, the spreading of fires would be greatly retarded."

loss of life in London similar to that in Glasgow of which we have been speaking. On Sunday last St. John's Chapel, Bedford-row, was fired by means, it is said, of the iron smoke pipes from the furnaces, used to warm the building. The heat being intense, had ignited the bond timbers, and the flames from them extended to the roof. A rush was made into the street by the congregation, but fortunately there were few people present, and no check-taker's barriers in the way, so that all escaped unhurt.

We were present at a meeting of the Institution of Civil Engineers on Tuesday evening last, when the general question of fire-proof constructions was discussed at some length. A paper by Mr. Braidwood was read, to which we shall refer hereafter, and an interesting discussion followed, wherein Professor Hosking, Mr. Farey, Mr. Cottam, Mr. Thomas Piper, Mr. Dines, and others, took part.

Apropos of warming, we must mention that poor Mr. Barry has again got into Dr. Reid's hot water. A petition from the doctor was presented to the House of Commons a few evenings since, complaining that obstructions were thrown in the way of carrying out his plans in the New Houses, and praying that a committee might be appointed to investigate the matter, and to call himself and the architect before it.

It is much to be regretted that Mr. Barry ever permitted any right of interference with his plans and arrangements to be given to another. He owes it to himself and the profession to make a stand and maintain his right position as architect. The architect is "the chief of the works," "first workman," and whatever is done should be subject to his approval and in accordance with his views. There cannot be two firsts in one series.

It is time that architects bestirred themselves; the prospect for them does not seem very brilliant. A new garrison chapel, which has been erected in Dublin, has led to some correspondence in the papers. The style is Norman, with transition to early English, and according to the designer's own statement, was taken from a church lately built in the west of England. The estimate was 3,000*l.*, and the cost about 2*l.* per sitting. The building was executed by contract, after public competition, by a builder who lost by the bargain. The accommodation afforded is for 1,560 adults and 224 children. A colonel in the Royal Engineers was the architect: and this is why we mention it.

If matters go on as they have begun, there will soon be little occupation for the professional architect. Clergymen are found to be the best qualified to design and erect churches and schools; soldiers to construct barracks, gateways, and castles; sailor officers, docks and bridges; actors, theatres; and Manchester mill-owners, warehouses and dwellings.

Othello's own occupation being gone, the only course remaining for him is to try another. There are some architects who would make uncommonly good manufacturers, and two or three who, if they would take to the stage, could play the "Jeremy Diddler" line of parts with considerable advantage to—themselves, a result which they seem usually to keep in view. There are many others, however, who would supply what the stage has often wanted,—well-bred and accomplished gentlemen, and for the sake of these, and for the sake of the art, we see with pain and regret how architects are being shouldered on all sides. Going to California would, perhaps, be thought *infra dig* (pronounce it how you like, if in the humour for a pun), but unless architects begin to look about them, they will soon have little chance of picking up gold or reputation anywhere else.

Some of our contemporaries, during the week, have been commenting on two of the craft, who, in former times, did manage to pick up the first part of these very desirable things somewhere in the neighbourhood of the Regent's Park.

The appendix to a Parliamentary report on the management of the Woods and Forests, just now published, has supplied materials for an attack on the proceedings of this office in former times, of no ordinary force. It appears that parties possessing influence have received leases of land at ridiculously small rents, to the disadvantage, of course, of the national income. In some of the cases quoted it is not improbable that an explanation of the circumstances in connection with the "take," would put the matter in a different light; as, for example, in respect of Nash, the architect, to whom, it appears, that for fifty-three houses out of sixty in Augustus-street, Regent's-park, his representatives pay only 1*l. per annum* ground-rent; or in the case of James Burton, to whom the land on which is built Chester-terrace, Regent's-park, was leased in such a way that, for each of thirty-one of these houses, a ground-rent of 6*l.* per annum only is paid.

We all know that owners are quite willing to let to one speculator a large piece of land at the commencement of operations, and, when there is a certain amount of risk attaching, for a much smaller sum than could be realised by letting for single houses at a later day, when the matter is fairly afloat; and further, that the speculator is often permitted so to divide the sum paid by him (within certain limits), that some of the houses would have but a nominal ground-rent: indeed, it is by this arrangement that the speculators in building-land look for their profits, the sale of the improved ground-rents, subject to which the houses thus circumstanced can be disposed of, being certain.

We allude to these facts simply as showing that it is not unlikely that the discrepancy between the real value of the plots of land alluded to, and the rents agreed to be paid for them by these two "lucky architects" as they are termed, would be found less than it appears, if all the circumstances were known.

An explanation of this sort, however, could scarcely be looked for in the bulk of the cases quoted, as they mainly refer to members of the aristocracy, to whom plots of land have been let for their private purpose at singularly incommensurate rents. Thus, it is stated that George Fulke, Lord Lyttelton, had "a piece of ground, part of Greenwich Park," assigned to him in 1802, for 61 years, at 1*l.* per annum; nor does it appear that any fine or premium in respect of this grant was paid.

"The beauty of the Green-park," says the *Observer*, "is celebrated in history and song. On the one hand it has the park of St. James's and its ornithology, with the Palace of Buckingham and the gardens thereto attached; on the other it has Piccadilly, with the triumphal arch, the statue of Wellington; below is greensward, and around are the mansions of the great and the titled; in the centre was Rosamond's-pond, but it has been filled up, and at one side is the reservoir of some rich water company. Who knows not the Green-park? But those who think they know it best, know very little of the private history connected with certain portions of it. For instance, is there one man in a million aware of the fact that the Most Noble the Marquis of Salisbury—the successor of him who shook his head so significantly—the great Lord Burleigh—holds a piece of ground in this park, for 99 years from April 5, 1796, at an annual rent—nominal rent would be a more accurate description—of 10*l.* 7s. 7d., and that he has never paid a penny as fine for the same. Most lucky as well as "most noble" Marquis of Salisbury! But he is not the only Adam in this fiscal Eden before the fall. There is Lord Vernon, who has another "piece of ground" adjacent, at 8*l.* per annum; Lord Yarborough a third, at 7*l.* 9s. 5d. per annum; Sir John Hoste a fourth, at 4*l.* 14s. per annum; Viscount Gage a fifth, at 8*l.* 18s. 6d. per annum; Lord Romney a sixth, at 5*l.* 4s. per annum: Lord Dundas a seventh, at 13*l.* per annum; the Earl of Cork an eighth, at 9*l.* 2s. per annum; and the Earl of Moira a ninth, at 7*l.* 16s. 3d. per annum,—all without prejudice in the shape of fine."

"Contrast this," says the journal we have quoted, "with the condition of certain tradesmen in the Strand, who have also the fortune to hold leases under the Crown. The house No. 2, Lowther-arcade, which is combined with No. 11 in the Strand, pays 60*l.* a-year ground-rent to the Woods, Forests, and Land Revenue Board. No. 5, in the Arcade, which is a single house, consisting perhaps of four rooms, pays 24*l.* per annum. No. 8, which is in the same predicament, pays 35*l.*; while Nos. 9 to 11, all similarly circumstanced, pay each 50*l.* a-year to the Crown—nearly as much as the Earl of Ellesmere pays for Bridgewater House, and ten times more than is paid by the Lord Romney. Contrast it also with the sum paid by the Duke of Buccleuch for his house and grounds in Privy Gardens—stretching from Whitehall to the Thames, a miniature park before, a French pleasure garden behind—viz., 75*l.* 16s.; or with the sum paid by Lord Prudhoe, 72*l.*, for his mansion in the same place; or with the sums in fact paid as ground-rent by any nobleman to the Crown; and then ask yourself whether or not one law for the rich and another law for the poor has not been the practical rule in this country? The Marquis of Hertford pays for the grounds on which his villa stands, in the Regent's-park, occupying perhaps one-tenth of the superficial area of that place of public recreation, only 66*l.* per annum; while a tailor or a grocer, a hatter or a hosier, in Regent-street, pays from 60*l.* to 155*l.* a-year for the scanty plot upon which stands his frail tenement—pays it to the Crown in the same manner as the most noble the Marquis of Hertford. Instances *ad infinitum* might be multiplied, but these will suffice for the present."

We are disposed to think that explanation would put a different face on some of these transactions, which certainly, as they now stand, look glaringly unjust.

THE IRON TRADE.—We hope that our hint, some short time since, to purchasers, as to the then favourable state of the market, was appreciated, as there appears to be now some little probability that the tide may turn. Indeed, an advance of 20s. on the nominal quarterly price has been already declared, and although little dependence need be placed on such an announcement, there are other slight symptoms of a start. The increased demand, however, exclusively arises, no doubt, from the mere fact that the market has lately been in so favourable a state for purchasers; there being no additional outlet for the article, nor any great call for its production.

ON THE TOPOGRAPHY AND ANTIQUITIES OF THE CITY OF JERUSALEM.*

HAVING in the previous paper described the principal localities connected with the present city, I will now as briefly as possible refer to the topographical description by Josephus before I call attention to the existing antiquities.

Josephus describes the city of Jerusalem as being fortified with three walls. The oldest walls, he says, began on the north, at the Tower Hippicus, and extended to a place called the Xistus, ending at the western porch of the temple. It passed on the other side, reckoning from the same place, by Bethso to the Essene Gate, and to the southward by the Fountain of Siloam, where it struck off to the eastward towards the Pool of Solomon (Fountain of the Virgin), and thence by Ophlas to the east porch of the temple. The second wall began at Genath, a gate belonging to the former wall, and so runs by the north side of the city to the fort Antonia.

The third wall began at the tower Hippicus, and ran to that of Psephinos, which is described as being on the north-west angle, over against the sepulchre of Helena and by the royal caverns, from the tower at the corner of the monument of the Fuller, whence it came up to the old wall, in the valley of Kedron. The foundation of this wall was the work of Agrippa, A.D. about 40, for the security of that part of the town he had built, as the city by this time had become so populous, that its space was too circumscribed; and the inhabitants had crept into a kind of suburb on the north side of the temple, next the hill called Bethesda, which is further alluded to as fronting Fort Antonia. The stones of this wall are described as being 20 cubits long, 10 broad, and very hard (probably of the native rock, as Mr. Roberts has possession of a fragment of the ancient walls, a compact limestone, similar to the rocks around); this wall had ninety towers, the middle or second wall fourteen, and the old wall sixty.

The circumference of the walls was thus 33 stadia. The tower of Ptephinos is described as a most exquisite piece of workmanship, octangular in form, and the summit afforded a prospect of Arabia, the sea, and the utmost confines of the Hebrews.

Herod built three towers on the old walls, called Hippicus, Phasael, and Mariamne, adjoining which, on the inside (therefore on Zion), was his palace, magnificent beyond description.

Herod also built the Fort Antonia, on an angle looking west and north, raised on a rock 50 cubits high, which was faced with thin scales of marble from the bottom to the top, both for ornament and security; it was so slippery there was no possibility of ascending or descending it. It commanded the whole temple, and joined the galleries of the temple with passages for the soldiers to go down to the temple.

The description of the Temple, its courts, galleries, porticoes, &c., as built by Herod and described by Josephus, is no doubt familiar to all, and its restoration has engaged the attention of many students.

The dimensions and description given by Josephus must be regarded with caution; he evidently amplifies when he is on the subject of the magnificence of his city, and as he wrote his work at a distance from the scene of the events, and after a lapse of some years, the particulars and measurements of his buildings and walls were most probably given from memory.

After the destruction of the temple by fire, in the siege and the taking of the city, in the second year of Vespasian, by Titus, he gave orders for laying the city and temple level with the ground, and to leave nothing standing but the three famous towers Phasaelus, Hippicus, and Mariamne, and, for the purpose of keeping a garrison, so much of the wall as enclosed the city on the left, which, as the attacks had been from the north side, would be either the west wall of the temple area, which formed the eastern boundary of Acra and Zion, or the east wall of the same Acra, which formed the extreme boundary of the whole of Jerusalem, both of which walls are, to a considerable extent, now standing.

To return again to the subject of the walls, it appears that, A.D. 136, Adrian rebuilt the walls, and called the city Ælia, and included in it several places which formerly were without the gates. This addition, I imagine, was on the north side, as traces of wall in that direction have been discovered by Dr. Robinson and others beyond the present walls, but which are generally ascribed as the remains of the third wall built by Agrippa; but, in my opinion, the remains are of the wall built by Adrian.

From the period of the restoration of the city by Adrian, the buildings erected by Constantine and Justinian belong to comparatively modern times, and now, what remains of the earlier periods of this once magnificent city, of the splendour of Solomon, or of the magnificence of Herod, and of its later Roman conquerors—of its walls, stately towers, royal sepulchres, kystus, bridge, palaces, and fortresses? Nothing but some courses of ancient masonry of a doubtful period, some tombs of small dimensions and of questionable taste, and some vaults, cisterns, and reservoirs; but nothing that can be called a building, or that will even lead to the restoration of any edifice, has hitherto been discovered. The remains in the citadel (supposed to be the tower Hippicus) consist of the lower part of a quadrangular building, about 70 feet by 56 feet, and 50 feet high, built of stones varying from 10 feet to 12 in length, and 3 feet in height. Hitherto no entrance has been found to the tower; but it is not probable that it is a solid mass of masonry 70 feet by 56 feet. At the joints of the stones the face is accurately sunk or channelled, as we term it, horizontally as well as vertically, but the face is left rough.

The springing stones of a large arch (probably of the bridge or viaduct over the Tyropeon alluded to by Josephus as connecting Zion with the temple) are worthy of notice. Three courses of the arch remain, abutting on and connected with the ancient wall of the temple enclosure, near the south-west angle, extending lengthways 51 feet, and by calculation would give the arch a span of 60 feet, and as the distance to the precipitous natural rock on Zion is about 300 feet, it is conjectured there were five arches in the whole. The stones are above 20 feet in length, and one is 5 feet 4 inches thick; at the joints are similar sinkings to those of the tower of Hippicus; but in this remain the extreme surface of the stone is worked perfectly smooth. I think the masonry of both these remains are of the same age—perhaps that of Herod. I cannot assign it to any period anterior to the Roman, certainly not to Solomon, as some authors imagine.

A similar style of masonry and construction is seen on the lower part of the city walls, and those which surround the temple area. On the south, east, and west sides of the latter, particularly at a spot on the west side, called the Jews' Wailing Place (where they, the Jews, have purchased permission to approach the boundary of the temple, to wail over the desolation of Judah, and implore the mercy and forgiveness of their God), are considerable remains. In the eastern wall are seen the remains of an arched double gateway, walled up with Saracenic masonry, called the Golden Gate. The ornamental details of this arch are shown in a very careful sketch by Mr. Roberts, which leads me to suppose that it is a work of the period of Constantine, and not of Adrian, as some supposed. The interior of this gateway was first explored by Mr. Bonomi and his companions; and from the sketches made by him I think the style of architecture of the interior fully fixes on this remain as a work of Constantine.

The wall that now encloses the tower on the north side I always conceived to be on the site of the Agrippa's or the third, wall. I am confirmed in this opinion by the published report of Mr. Tipping, who has recently visited Jerusalem for the purpose of illustrating a new edition of Josephus, who has described this wall as exhibiting remains of the ancient masonry to a considerable extent at the eastern angle, and as built of stones 24 feet long by 5 feet 8 inches broad and 3 feet 2 inches deep on the return angle, and likewise at the inner parts of the Damascus Gate; and, if I remember rightly, I saw some ancient masonry at the northern angle of this same wall. As it appears that the same style of masonry exists at these several spots, some of which we know the date of (Agrippa's wall for instance), we cannot, I think, ascribe one part to the age of Solomon without ascribing the whole to that king. I should have mentioned that the arch called "Ecce homo" being, I think, of ancient masonry, corroborates my view that the second wall passed in that direction according to the description of Josephus.

Among other existing remains is an arched chamber or reservoir of ancient Roman masonry, and a conduit for water, hewn out of the rock at a depth of 23 feet below the present surface, discovered by Mr. Johns, the architect, in digging for the foundation of the Protestant church near the citadel or town of Hippicus. Besides this discovery of Mr. Johns, a fragment of a Corinthian capital and a Doric capital (similar to that of the tomb of Zachariah) were dug up on this site.

The researches of Mr. Catherwood on Mount Moriah, led to the discovery of very extensive substructure under the mosque of El Aksa, and adjoining the east wall, consisting of piers of squared stones, with arches from one to the other, and the spaces between vaulted, through which the roots of the trees growing on the ground around the mosque had penetrated and taken root again on the ground of the vaults beneath. I am not able to give any decisive opinion on the age of these substructures; the vaulting may be of a later date than the piers, probably of Justinian's time. Mr. Tipping has since then discovered some more arched chambers, with columns, piers, and arches, and a gateway leading to the south side of the temple area, but the engravings from his views are not sufficiently clear to enable me to form a proper opinion of the age of these great works.

These substructures require a careful examination, and it is probable that the whole area of the temple platform may consist of similar constructions. I shall not attempt any description of the mosque of Omar, as my object is to describe the antiquities, and not the modern buildings. Even had I attempted I could only have done it from the dictation of Mr. Bonomi, who I hope will give some account of that beautiful and singular building.

In conclusion, I will allude to some of the points that have given rise to recent controversies. From the situation of the Holy Sepulchre, within the precincts of the present city, doubts have arisen as to the authenticity of the site. If the second wall ran, as I suppose it to have done, and the third wall, built after our Saviour's death, by Agrippa, was where the present north wall stands, the topographical difficulty at once ceases. As regards traditionary evidence, there can be no doubt, I think, of the correctness of the site. Many of the Christians who returned to Jerusalem after the seige of Titus, must have been alive at the period of the Crucifixion, and the author of "Epitome Bellorum Sacrorum," asserts that forty-six years after the desecration of the city by Titus, the Christians obtained permission of Adrian to rebuild a church over the tomb of our Saviour, and to enclose in the new city the other places venerated by Christians. From this time to Constantine and downwards, we have successive attestations of the correctness of the site of Calvary. Another important argument in favour of the present site is, that tradition has never assigned any other locality for this sacred spot, and those who have rejected the present site have not been able to point out another site, excepting one writer (Mr. Fergusson), who has made a most startling suggestion, viz.—if I rightly understand him—that the church of the Resurrection was on Mount Moriah, north of the temple of Solomon.

The situation of Zion has only been, I believe, disputed by two writers. Dr. Clarke supposed the City of David to be on the Hill of Evil Counsel, and what we called Zion to be Acra,—an assumption that has never been supported by any writer. It is manifestly untenable, from the fact of its making Zion a mile from Mount Moriah, to which we know it was contiguous, and joined by a bridge.

Mr. Fergusson, whom I have just alluded to, has supposed Mount Moriah to be also Zion, in consequence of a passage in Maccabees, wherein it is mentioned that the destruction of the altar of the Lord was witnessed from Zion, and that they "fortified Zion with high walls and strong towers, lest

* See p. 98, *ante*.

the Gentiles should come and destroy it again." Whereas I conceive the word "Zion," as here used, merely means the *City of Jerusalem.*

J. J. SCOLES.

ON THE CONSTRUCTION OF PRISONS.*

RESUMING the consideration of this subject, another important object to be obtained is a perfect sewerage, and a complete and speedy removal of all substances and fluids which, exhaling noxious effluvia, must prove most destructive to health. This, together with a wholesome system of ventilation (of which I shall speak more fully hereafter), are points which too often receive but very indifferent attention, and yet are those on which much depends. It will of course be a considerable advantage obtained to keep, under the rules of the system, a large number of prisoners with as few officers as possible; but I have found, in many instances, that too strict an observance of this principle has rendered the discipline exceedingly defective, and much devolves upon the architect to make such provisions for officers as he thinks will be suitable in proportion to the number of prisoners. The entire front of the building should, in my opinion, be devoted to the accommodation of persons connected with the superintendence of the prison; with suitable residences for the governor and chaplain equidistant from the centre. Those portions should project from the main building, and be supplied with private entrances so as to afford seclusion to themselves and families from the rest of the apartments appointed for the minor officers of the prison; but care should be also taken that means be afforded of immediate communication with the rest of the building when desirable. Although I am a great advocate for the buildings being constructed on a principle of "radiation," as proposed and effected by the model plans on the Pentonville system, and which have been considered as the *ne plus ultra* of perfection, yet I must say that when it is intended to accommodate male and female prisoners, I think that its principles are still open to suggestions for improvement. So many instances have occurred of communication taking place in consequence of inattention to proper discipline, but more particularly on account of a mal-arrangement in the plan, that this is a very material point to be considered. In order to carry out the discipline fully, the male officers should be separated from the females, in the same manner as the prisoners, and in fact the plan should be so designed as to construct two prisons in one building, and, though in immediate connection, so arranged as that the inhabitants of one may no more interfere with the other than if they never existed. This cannot be effected by the plan above alluded to, and as the male and female prisons radiate from the same central point or inspection hall, the consequence must be, that opportunities of communication are afforded, which by some consideration could be prevented. The method by which I propose to obviate this difficulty, without interfering with the principles of radiation, is, by having separate halls for the reception of male and female prisoners placed at each side of the centre building, appropriated as officers' apartments, leading by corridors to inspection halls, from which the buildings designed for the males, and those for the females, respectively radiate. By this means the object will be completely gained, and no intercourse of any kind whatsoever can take place between the officers of the different sides of the prison. I could, from my own personal knowledge, enumerate many instances of communication of the most disgraceful description occurring in prisons where this defect exists, but I trust that the mere reference to its destructive principles will be sufficient to aid in guarding against them, without requiring me to enter into a minute catalogue of those which have come under my own immediate observance. It is also the fact that in some prisons where the silent system is carried out (or rather attempted), female nurses attend sick male patients in the hospital wards, and sleep in rooms immediately contiguous to them. This is a point so glaringly defective, that it requires but very little comment, and by some foresight on the part of the architect, many of those deficiencies, and the bad results arising therefrom, could be easily prevented. Each corridor should be under the care of at least one officer, who, by his humane and affable disposition, would be suited for the discharge of the responsible duties which are imposed upon him. Suitable provision should therefore be made for one at an extremity of each corridor. So much depends upon the prudence and generosity which the officers exhibit to those under their charge, that a great deal of care should be taken in the selection of sober, steady, and intelligent persons to fill these situations. I would suggest that at another extremity of each corridor a wash room should be provided, not for ordinary purposes, but that the prisoners may occasionally have the opportunity of bathing themselves, and effecting a thorough cleansing of their persons. This will be found most conducive to health. As an occasional change of wearing apparel is absolutely necessary, fumigating apartments with steaming apparatus complete should be fitted up in the basement story, for the purpose of removing vermin and all infectious tendencies which the clothes may have acquired. It would be desirable in large prisons to supply such accommodation as is necessary for religious distinctions. In almost all the buildings which I have inspected, I remarked that there is a great inattention paid to this point, and that it is too often looked upon as a minor one, while it is in fact very material and deserving of much consideration. Great inconveniences must arise from the celebration of the ceremonies of different persuasions in the same apartment, not to speak of the infringement of moral principles which this arrangement causes, and I think that there should be separate accommodation provided for the followers of each persuasion. I do not of course mean that there should be a distinct place of worship for the disciples of every sect which is likely to exist in a prison, but I wish to show that suitable distinction should be made between those which require apartments differently constructed and fitted up for the practice of their respective ceremonies. A church and chapel will effect the required objects. The seats would be so arranged in each as to prevent prisoners from seeing each other, at the same time affording them an opportunity of having a perfect view of the officiating clergymen.

Infirmaries should be constructed at each side of the building for the accommodation of both sexes, consisting of sick wards, surgical ward, operation room, and convalescent ward, together with a bath room and nurse's apartments. Independent of these it would be well to construct apartments (with all necessary appendages) for patients suffering from fever and all other contagious diseases, in order to prevent their spreading to the rest of the inmates. Spacious airing grounds should be in immediate connection with each infirmary, and all the arrangements planned to afford facilities for carrying out the system.

To the juvenile departments of the prison school-rooms should be attached for instruction, fitted up with seats similar to the chapel, and supplied with a pulpit, from which the teachers have full inspection of their pupils; and adjoining these rooms there ought to be apartments provided for the accommodation of the master and mistress.

The kitchen, culinary offices, &c., should be so arranged as to prevent the intercourse above alluded to, and to admit of the discipline being carried out as fully in *this* as well as *other* portions of the building. I think it would be advisable to place at each side of the prison such offices as are best suited to each sex; for instance, the laundry and all necessary accommodation at the female side; and the bakehouse, with the requisite stores, at the male side: by this plan each class may mutually assist the other in those departments which are best suited for the respective sexes. These buildings must be so designed as to admit of free access, and be situated within the space enclosed by boundary wall: apartments for officers should be judiciously distributed throughout, in order to afford them a perfect surveillance of the prisoners in fulfilling their different avocations.

Airing yards, on a radiating principle, with an inspecting officer's station in the centre, should be constructed at each side of the prison, with open railings at each end, and of such dimensions as will supply sufficient space for the recreation and exercise of the prisoners.

The space between the boundary wall and the main building should be at least 30 feet, and extend around the entire prison, that free communication may be afforded to all parts. The outer wall must be 20 feet high, in order to prevent the possibility of escape. In many instances space enclosed (if any) by the boundary wall, is so narrow, and the wall itself so low, that it frustrates the intention of preventing the escape of prisoners, and by its construction frequently affords them facilities for so doing. The depth of its foundations should also be attended to, as examples have been known of their having been undermined in a very short time.

The corridors should be sufficiently spacious to prevent the prisoners communicating with each other from opposite cells—say 10 feet in width. The cells (particularly when the separate system is intended to be carried out) should be large enough to admit of the prisoners moving about, and exercising themselves therein: 13 feet by 8 feet are considered good dimensions, and on no account should they be less than 12 feet by 7 feet, and 10 feet high. This proportion is best adapted for inspection. There should be a total absence of wooden floors and ceiling joists; in the first place, for the purpose of preventing communication and the spread of fire. The cells should be floored with substantial flagging, and have ceilings arched with brick. A window must be supplied to each cell, which will admit a proper amount of light, placed at sufficient height from the ground to prevent the prisoner from looking out. All necessary apparatus for the convenience and comfort of the prisoner should be fitted up in each apartment, and furnished with the means necessary for the preservation of his health. The doors ought to be formed of strong oak, sheeted with iron on both sides, with apertures for inspection and for the supply of provisions formed in each.

All the buildings should be constructed on a fire-proof principle.

The only point which now remains for me to draw attention to, is "the system of ventilation and warming to be observed throughout." Up to the present time so many improvements have been made in this department, that it is difficult to know which of the different systems most to approve of; but I have selected that which I consider the simplest and most economical, and which experience has shown to be efficacious. As the principle of ventilation may be reduced to two heads, namely, "the supply of fresh or heated air (as occasion may require), and a withdrawal of foul air," I shall explain how these may be effected. An apparatus is generally placed in the basement story of each side of the building, fitted with all necessary tubes, pipes, &c., with which there is in immediate connection a large cold air flue, supplied by a shaft out of doors. The air by this means introduced may either be warmed or left at its natural temperature, and passes hence into a flue constructed under the corridor floor, from which small flues branch off, and pass up the inner wall, terminating immediately under the ceiling of the cells, through which the fresh or temperated air is diffused by means of an iron grating. The foul air is extracted by a grating placed near the floor of each cell diagonally opposite to where the fresh air is introduced: this is the opening of a lateral flue which passes down the outer wall, and communicates with a main foul air flue, placed under the floor of basement. All the corridors are similarly ventilated. In order to effect a proper circulation, the main foul air flues are placed in the perpendicular ventilating shaft, on each side of the smoke flue of the apparatus, which is built up between them to about 15 feet of the top. It will be found desirable to construct the smoke flue of iron instead of brick, as the former is much better adapted for the propagation of heat. A damper (which will be under the command of a superintending officer) should be placed in the extracting flue, close to the outer doors of the cells, and so constructed as to leave sufficient room to effect a proper circulation. It would be well to observe that all chance of communication by means of the ventilating flues, should be strictly guarded against by the

* See page 63, *ante*.

architect. In conclusion, I cannot but observe that there is a very great carelessness and indifference manifest in want of attention to some most essential points in constructing prisons; and I trust that these few notes may prove advantageous.

Dublin. J. J. L.

ROYAL INSTITUTE OF ARCHITECTS.

ARCHITECTS' PROPOSED BENEVOLENT FUND.

ON the 12th ultimo, a general meeting of the Institute was held, to receive a report from the Committee appointed to inquire into the above matter.

It appears that the objects of the charter do not comprise the establishment of a benevolent fund, and the solicitor thinks that the Institute have not legally the power of establishing and administering such a fund. The committee, therefore, had confined themselves to the consideration of the proposed distribution of the fund through the medium of the Artists' General Benevolent Institution. From a letter addressed by the memorialists to the Council of the Institute, it appeared that such proposed arrangement was by no means satisfactory to the general body of the memorialists,—the committee therefore suggested, "that a communication be made by the council to the memorialists, to the effect that it regrets the insuperable difficulties arising from the terms of their charter, which prevent the Institute from undertaking the formation and distribution of the proposed benevolent fund, but offering, at the same time, to afford such support and encouragement for the establishment and maintenance of such a fund as the constitution of their charter will admit, and as the council of the Institute may from time to time consider expedient."

The report was received and adopted, so that the memorialists are just where they were at starting; and the profession, irrespective of the Institute, must take the matter into their own hands if they wish the fund established.

On Monday, the 19th ult., Mr. Sydney Smirke in the chair, Mr. James Fergusson (author of "An Inquiry into the Principle of Beauty in Art") and Mr. H. Oliver were elected associates.

Specimens of moulded bricks from the estate of the Earl of Leicester, Holkham-park, were exhibited, including labels, copings, mullions, paving tiles, chimneys, &c. made of an excellent material. The price of a handsome Tudor chimney-top, 8 feet high, thus formed, was stated to be 4*l.* 10*s.*

Whinstone.—Mr. Burn said he wished, before proceeding to the business of the evening, to withdraw an observation he had made on a recent occasion, to the effect that Whinstone was a very absorbent material. He had been misled by adopting a general opinion. Experiment, to which he had been led by what was then said, had shewn him that Whinstone was but very slightly absorbent, and he wished to set himself right.

Mr. Charles Barry, Jun., then gave an account of a mode of constructing malleable iron fire-proof flooring, recently patented by Mr. Beardmore, the substance of which we give elsewhere. A variety of objections to the invention raised by members were ably replied to by Mr. Barry; and Mr. Donaldson, in moving, and Mr. Poynter, in seconding, a vote of thanks, congratulated the profession on the *début* of the son of their esteemed colleague.

Mr. T. H. Wyatt made some remarks upon the church of St. Andrew, at Greensted, in Essex, mainly in reply to published assertions that the ancient church had been demolished. We shall give a view of the church as restored, and append to it some few of Mr. Wyatt's notes.

EXHIBITION OF THE SCOTTISH ACADEMY.—The present exhibition in Edinburgh is well spoken of, and attracts large numbers of persons. A taste for the fine arts is certainly increasing amongst the Scotch generally. Amongst the principal works are enumerated pictures by the late Sir D. Wilkie, the late W. Collins, and the late W. Simson; Roberts, Sir W. Allan, Maculloch, Noel Paton, and Watson Gordon.

THE LATE MR. HARVEY EGINTON.

MR. HARVEY EGINTON was the son of Mr. Raphael Eginton, a glass painter of some note, under whom he commenced his architectural career. His chief opportunity for acquiring a knowledge of architecture was limited to the resources afforded by studying in the cathedral of the city (Worcester) in which he resided; but this, with the information his father was able to render him, soon qualified him (being of a very persevering disposition) to assume the profession in which he afterwards made rapid progress. Having executed a few works of minor importance, he obtained the countenance of Mr. H. G. G. Ludlow, a magistrate of the county of Wilts, under whom he executed a work of magnitude, and whose friendship he retained up to the time of his decease, having lately completed a church built and endowed by that gentleman. Soon after this he was appointed (through the recommendation of Mr. Britton) architect for carrying out the restoration of the parish church of Stratford-on-Avon. About this time, too, he was engaged in the restoration of St. Lawrence Church, Evesham. One of his last and best works was the restoration of the parish church of Kidderminster. At the time of his decease he held three public appointments, that of county surveyor, architect to the Incorporated Society for Building Churches and Chapels for the Worcester District, and Architect to the Worcester Diocesan Church Building Society. The following are the principal edifices upon which he was engaged. The erection of Broseley Church, Shropshire; Dawley Church, Shropshire; St. Luke's Church, Birmingham; St. Michael's, Worcester; Westbury Church, Wilts; Malvern Link Church; Headley Cross Church; Trimpley Church; North Hill Church, Malvern; St. Paul's Church, Worcester. The restoration of Paulers Pury Church, Northamptonshire; Bredon Church, Worcestershire; Pershore Abbey Church; Walton Church, Warwickshire; Clifton-on-Seine Church, Worcestershire; Stoke Prior Church; Honeybourn Church; Powick Church; Grimley Church. The erection of Tenbury Vicarage; twelve police stations; a mansion at Malvern; a mansion at Yelverton; Martley schools; Spetchley schools; St. Nicholas schools, Worcester; Westbury schools; steward's house, Spetchley; glebe houses, Malvern; extension of Worcester County Prison; restoration of Sudeley Castle and of Astley Hall. Mr. Eginton died on Ash Wednesday, at the early age of 40.

THE "BURIAL OF HAROLD."

A CURIOUS CASE.

SIR,—ON the north side of Leicester-square, beneath the entrance to the premises known as Miss Linwood's Gallery, and subsequently as the Walhalla, you descend a few steps, where, on a very unpretending entrance, is inscribed "Wine Shades." It consists of two spacious saloons, laid out for refreshments in the usual style. Within these few days, whispers and rumours have led many of the curious, the inquisitive, and the most eminent in art, to make a visit to this subterranean abode of the juicy divinity; and it must be openly avowed that a problem is here elicited which must be satisfactorily solved, or the integrity and reputation of an artist will be injured.

We all recollect that Mr. F. R. Pickersgill, A.R.A., painted a picture representing the "Burial of Harold," which was rewarded by a first-class premium, in the exhibition at Westminster Hall, in 1847. This picture was subsequently purchased by Government, at the recommendation of the Royal Commission for promoting the Fine Arts, to be placed in the New Palace at Westminster. What will be the astonishment created when it is stated that, in one of the saloons of this "Wine Shades," on the right-hand side in entering, there is hung a picture of this same composition, of small size, exactly the same in the arrangement of all the figures, with the single exception that one of them, in the middle distance, bears a shield. The straining-frame and canvas on which this phenomenon is painted bear the impress of at least half a century of manufacture, on examining the back. The execution of the picture is extremely wretched, and would at first glance impart the notion of being the production of a feeble hand copying a better work.

There can be no hesitation in asserting that the entire affair must be fully explained, and it behoves Mr. Pickersgill to take the initiative in the matter. If it prove to be, as we hope, a rascally daub got up upon an old canvas to ruin the character of a talented artist, no reprobation would be too strong for the transaction. As there is no restraining the extensive circulation of verbal calumny until the public ear becomes thoroughly poisoned, it is better that the circumstance should be investigated without delay. One of the attendants in the room where the picture is hung said, 100*l.* had been offered for the picture since its new-born notoriety. If true, by whom?

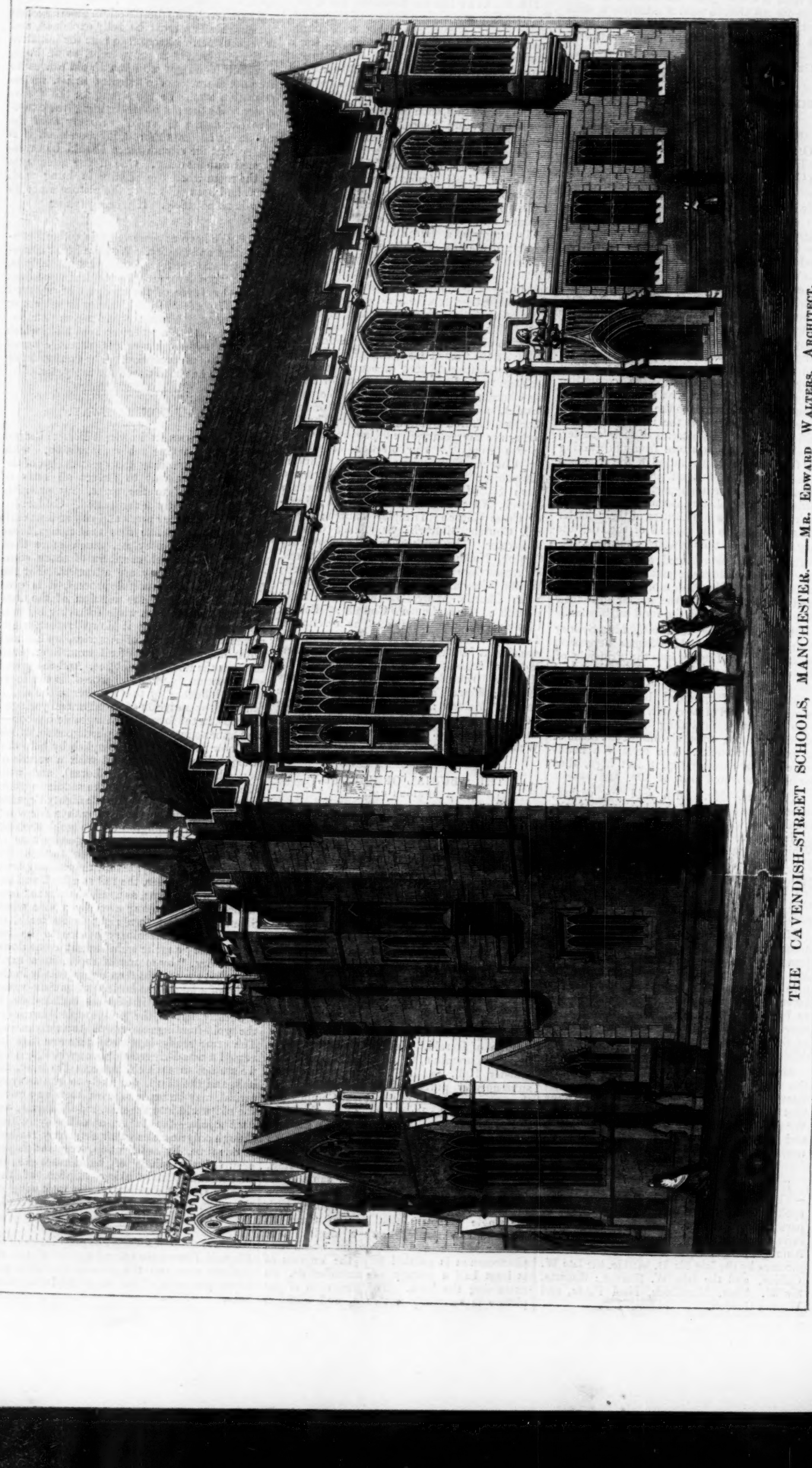
M.

*** We have not inserted this without consideration and inquiry. We gave Mr. Pickersgill intimation of this picture, and his reply is, that he "has never seen the picture in question, nor is he aware of the existence of *any work* resembling the 'Harold,' either in subject or arrangement." The identity is unquestionable, and the paint has a settled and old look, which does not appear, under the recent coat of varnish, to be deception. The possession of the picture has been traced for five years.

BALLOON RAILWAY.

A MECHANICIAN in Great Portland-street has been taxing his invention, with the view of forwarding the quiet design of the Yankee Government to attract all sorts of 'lads of metal' to the great, but probably still more greatly exaggerated, Californian magnet, where they press and rub against each other much more like files than filings, loose particles though they be, much more than integral and useful members of those communities whence they are attracted. For the facilitation of this useful process, it is proposed to supersede the mission of the iron horse altogether, even while following his railway track, or laying it down rather, right across the continent of America, up hill and down dale, and clear of all tunnelling, even through the Rocky Mountains. And the grand succedaneum to 'hell in harness' is the locomotive influence of that 'power of the air,' a fair wind, operative on an aerial, or really winged Pegasus, in the form of a manageable balloon—that hitherto impracticable phenomenon, which it is now proposed to accomplish by help of a straight line of wooden rail with a saddle of iron (though without the horse), and with wheels to run underneath the saddle in place of on the rail, and to guide the flighty Pegasus and its gold hunting riders, with a fair wind direct, from Washington to the gold-washing fields of California, at the goodly rate of 50 miles an hour. And even though the wind should not be quite fair, the running train is to act as a rudder, the rail as a keel, and the balloon, we presume, as a sail, so that the 'land lubber' may cut along even by a side wind. Should the wind turn right in its teeth, or the ship-shape machinery chance to be becalmed, the 'angelic train' might come down from above, "by means of ropes, in a car." But what they might then do, especially in the midst of a boundless horizon of prairie-ocean, or a rushing and irresistible buffalo-tide, is prudently left to the pre-occupied fancies of the gold-hunting emigrants themselves.—The same really ingenious patentee has invented a wheel-rigged ship, or a whirligig-ship, we are not sure which, wherein the lame, the halt, and the blind, not likely to run away on arrival, may be made to work their way out of the old world into the new, *vid* California, *and back again*,—the latter a difficulty which, though only now somewhat singularly realised, at one time, by anticipation, very much pre-occupied the minds of unbelievers in the transatlantic land-seeking mission of that Noah's Dove, Columbus, ere he took wing on the ocean waste in search of the golden land.

SHEFFIELD WARE.—The proprietors of the *Sheffield Times* have offered a prize of 10*l.* for the best essay on the present condition and future prospects of the staple trades of Sheffield.



THE CAVENDISH-STREET SCHOOLS, MANCHESTER.—MR. EDWARD WALTERS, ARCHITECT.

THE CAVENDISH-STREET SCHOOLS, MANCHESTER.

In the course of our notes in Manchester at the end of last year,* we mentioned an extensive school-house, then building, in Cavendish-street, behind Dr. Halley's Independent Chapel. The annexed engraving is a representation of the schools, and shews also a part of the chapel.

The building covers an area 127 ft. by 44 ft., containing boys', girls', and infants' schools on the ground floor. A spacious centre staircase leads to the grand centre hall, or Sunday school, on the upper floor, 80 ft. by 40 ft., with library and lecture room at either end, 44 ft. by 20 ft., separated from the hall by an enriched screen (glazed), affording a view of the entire range of building.

The height of the hall is 38 feet, divided into seven bays, with open principals filled in with tracery. The hall is lighted by seven three-light windows on each side. Galleries carried on projecting brackets from the screens on three sides of the hall, afford communication to ten class-rooms over library and lecture rooms, these rooms being only 14 ft. in height. The schools on the ground floor are 18 ft. 6 in. high. In the basement are kitchens, and on the ground floor, in addition to what has been mentioned, are accommodations for parties residing on the premises.

The cost of the building was 4,700*l.* without fittings, these, namely forms and desks, will probably cost 500*l.* more.

The building was erected under the superintendence of Mr. Edward Walters, architect.

PROCEEDINGS AT BIRMINGHAM, MANCHESTER, AND HULL.

SANITARY inquiries have been going on at Birmingham and Hull; and one of the aldermen of Manchester has been lecturing his colleagues and constituents there on the sanitary, business, and other general improvement of that busy city.

The Government Inspector at Birmingham was Mr. R. Rawlinson, appointed by the Board of Health in compliance with the request of one-tenth of the ratepayers of the borough.

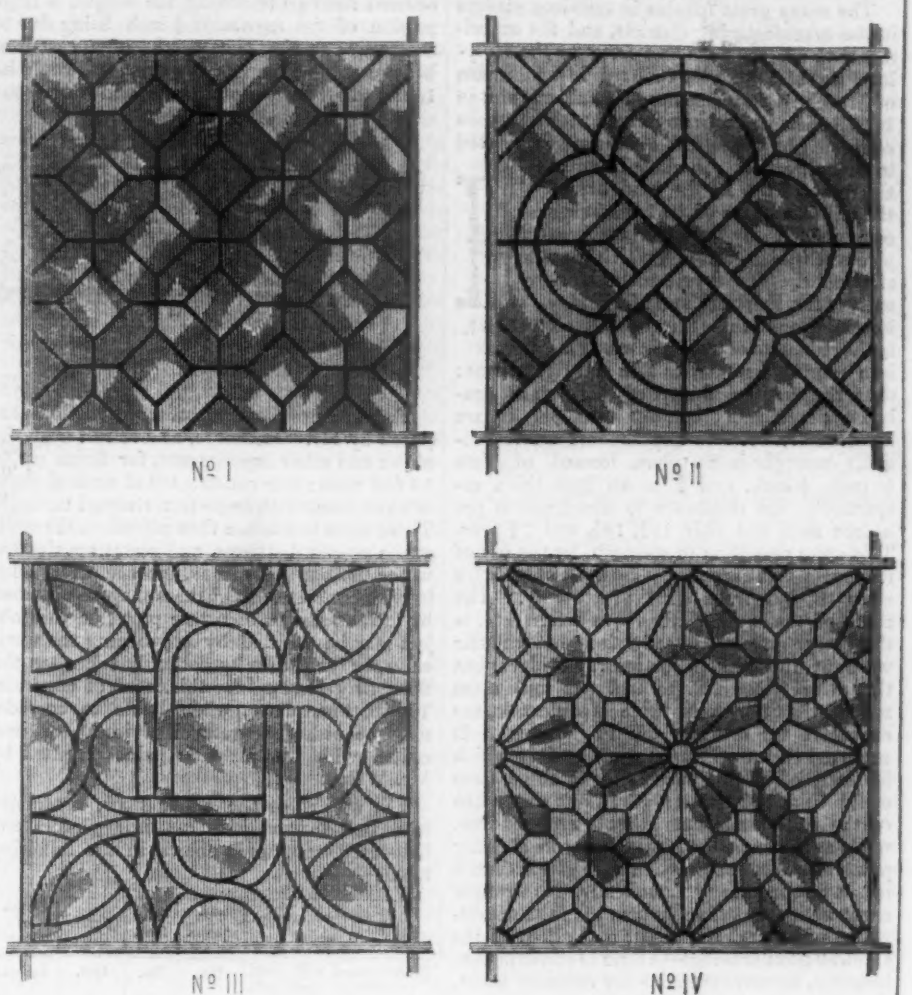
From the evidence adduced before him, it appears that the sewerage, so far as it has been carried out, is deemed unobjectionable; indeed, the inspector complimented the town surveyor, Mr. P. Smith, on the fact that, "unlike many other towns, Birmingham would not be required to undo anything of what they had done with regard to the sewerage." But the great evil there to provide against was the want of sufficient power to compel parties to lay in their drains. Throughout 4½ miles 71 yards of the new sewerage of 1845, only about seventy-five private drains had been laid in. Whereas privies, water-closets, and open cesspools, without such issue, not only abounded, but were on the increase. In more than one of the more aristocratic parts of the town, the water-closet refuse was regularly emptied into the street gutters! The town surveyor considered that the Commissioners for whom he acted should have power to form the drains as well as the sewers.

The defective supply of water,—the unwholesome state of some of the grave-yards, the clerical proprietors of the worst of which had refused to abate the nuisance,—the unhealthy state of courts and lodging-houses,—the prevalence of local nuisances, in shape of foul ditches, slaughter-houses, &c. &c., were also all discussed. It appeared, however, that as far as possible an effective system of street cleansing by machines and otherwise was adopted, and that Birmingham had by no means a bad pre-eminence as to fever or general mortality compared with Manchester, Sheffield, &c.

The Hull inspector was Mr. Smith, of Deanston. Great complaint was made of the prevalence of pulmonary diseases in this district, an evil more particularly attributed to the saturation of the soil with undrained moisture. But the general mortality is greatly more than the lowest estimate at which the Board of Health think it right to interfere.

* See vol. vi., p. 577.

FORMS FOR WINDOW GLAZING.



Dr. Daly declared that house drainage in Hull had virtually no existence. Even the chief place of business is not half drained, and yet the inhabitants themselves appear to be ostentatiously anxious to promote the salubrity of their respective neighbourhoods, or at all events their own individual reputation for cleanliness, as Mr. Smith remarked that "in many streets which were in a very defective condition, the inhabitants paid particular attention to the cleanliness of the flags in front of their doors." Some of the graveyards appear to be in a bad condition. St. Mary's, in Lowgate, had no drainage whatever, and rises 6 feet above the old level of the street from the mere accumulations of human remains. The wells near it are polluted, and a heavy odour prevails all round it. Many of the inhabitants make most piteous complaints about the dirty, stinking, brackish, hard, Hull water with which they are, medically speaking, still cleared out. Others stoutly uphold its salubrity, even while admitting that it is impregnated with all the sewerage of Beverley and Hull. The supply too is not sufficient.

The Manchester alderman, Mr. Hopkins, in course of a comprehensive and able disquisition, in the Royal Institution, on the various requisites to the healthfulness, comfort, and business convenience of the city—a disquisition which we cannot venture even to broach—alluded to the water-works now in course of construction by the corporation to the east of the town. These, he remarked, "will, at an early period, furnish a supply of twenty millions of gallons of water each day, and, if it should be required, thirty millions. As the quantity furnished at present is only about three millions, it is evident there will not only be sufficient to supply the inhabitants, flush the sewers, and wash the streets, but also to use for any other public purpose that may be thought desirable, such as watering the streets, supplying fountains, &c. &c. This water is intended to be conveyed to every dwelling in the borough; and, as it will always be on—by night as well as by day—no want of it will be experienced by the poorest inhabitant."

FORMS FOR WINDOW GLAZING.

WE give the annexed specimens of glazing from buildings on the continent, as suggestions. Nos. 1 and 4 are from the Church of St. Denis, St. Omer; No. 2 from the Church of St. Etienne, Beauvais; and No. 3 from the Church at Aire, in Flanders. Each pattern is about 2 feet square. We have others to follow.

ON A NEW FORM OF MALLEABLE IRON FLOOR,

LATELY PATENTED BY MR. NATHANIEL BEARDMORE, CIVIL ENGINEER.

The paper on this subject, read by Mr. Barry, jun., at the Institute of Architects, as already mentioned, commenced by remarks upon the want of toughness in cast-iron, and its dangerous nature when highly heated, with a review of the comparative strength of cast and wrought-iron, as shown in the following table:—

Table of Comparative Qualities of Cast and Wrought-iron.

	Power to resist Tension.	Power to resist Compression	Safe limits of Tensile Strength.	Price.
	Per square inch.	Per square inch.	Per square inch.	Per ton.
Cast-iron	7 tons.	50 tons.	4 tons.	9*l.*
Wrought-iron	24 tons.	Maximum by Hodgkinson, 35 tons. Rondelet, 31.5 tons. Buchanan, 37 tons.	16 tons.	27*l.* for plate girders, as boiler work.

From this it will be seen that, while the tensile strength of wrought with respect to cast iron may be computed at 4 to 1, their prices are in an inverse ratio, viz. as 3 to 1. It should, however, be remarked that in the case of cast iron, 4-7ths of ultimate strength cannot be safely exceeded, while in the case of wrought-iron, although 2-3rds of the ultimate strength is the load to be assumed for practice, a much higher proportion can be borne by it as a passing load, from its non-liability, as is the case with the former material, to fail at

once, frequently from internal and unseen imperfections.

The many great failures in cast-iron girders in the manufacturing districts, and the experiments to ascertain the best form for the Holyhead tubular bridges, induced Mr. Fairbairn of Manchester to consider this subject, and in 1845 he patented a beam formed with two webs connected by upper and lower flanges, riveted in each direction, the whole being in the form of fig. 1; the tendency of the webs to bulge or collapse being counteracted by short transverse pieces of tubing, through which pass rivet bolts. The experiments, however, of Mr. Fairbairn and Mr. Hodgkinson, showed that there was a limit to the reduction of weight in wrought-iron beams, when used in thin and light forms: thus the compressibility of cast-iron is probably never less than 50 tons per square inch, while, in their experiments on rectangular wrought-iron tubes, formed of plate ½ inch, ¼ inch, and ⅛ of an inch thick respectively, the resistance to compression per square inch was only 19¼, 14½, and 7¾ tons. This great reduction in strength by the use of thin metal was caused, not by want of resistive strength, but from want of stability. The result of the experiments above referred to, is the very general introduction of tubular wrought-iron girders for railway bridges, but the price (from 28*l.* to 32*l.* per ton) must render them, without some modification, too expensive for ordinary use in buildings. It occurred then to the author of the floor which is described in this paper, that if some form could be adopted where advantage was taken of the full tensile strength of wrought-iron, while at the same time by insuring its stability power to resist compression were given, then it might be used very economically. No stronger construction was then known than the combination of square cells used for the floor of the Conway tubular bridge—a form of construction, however, far too expensive for ordinary floors, from the cost of riveting the top sheet of iron, especially on a small scale. After some consideration, experiments were made to determine the effect of a combination of iron for tensile and some other material for compressive strength, and several beams were made of the form fig. 2, where *a* is a T beam of sheet-iron stiffened by brickwork, as shown at *b*; but it was found on loading these that the bricks cracked and slipped off, in the manner indicated in the figure, showing that the mere resistance of brickwork to longitudinal pressure would not practically be of any value.

Fig. 1.

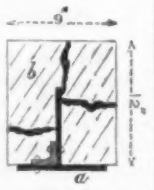


Fig. 2.

A rectangular tube was then selected, after one in Mr. Hodgkinson's experiments, formed of malleable iron 1-16th of an inch thick, 6 inches deep, 4 inches wide, and 7 feet 6 inches bearing; the top plate was omitted, but tie-bolts were placed at intervals, connecting the sides, and the whole was filled in with concrete; the weight to break this down, when hung in the centre, was 7,206 lbs., the same tube empty, but with a top plate, was, by Mr. Hodgkinson's report, crushed with 3,156 lbs.

In the above experiment the failure was by the sides of the tube bulging outwards at the centre, and it suggested itself, that if there had been concrete outside as well as inside, the bulging would not have occurred. A model was therefore constructed of sheet and angle iron of the dimensions shewn in Fig. 3, the part lightly shaded being filled in with concrete; the bearing was 12 feet, and the breaking weight in the centre 5 tons 14 cwt., the bottom of the beam having been torn asunder without the slightest buckling of the vertical plates.

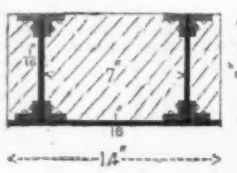


Fig. 3.

A beam of similar construction 23 feet bearing, and 13 inches deep, was made of sheet iron, 1-12th inch thick; the weight of iron altogether in this beam was 656lbs., and it carried 12 tons equally distributed (including the weight of concrete), for several weeks, with a deflection of 1¼ inch, 1 inch of which recovered itself on removing the weight, a large portion of the remaining ¼ inch being due to a defective scarf. The weight of a cast-iron beam capable of supporting this load would be 1,800lbs. These experiments and numerous others seemed to shew that the uniform pressure of concrete against the whole surface of the web, and under the top flanges of the beam, would produce the effect of a continuous strut, and thus enable comparatively thin plates to assume the true character of a beam or girder.

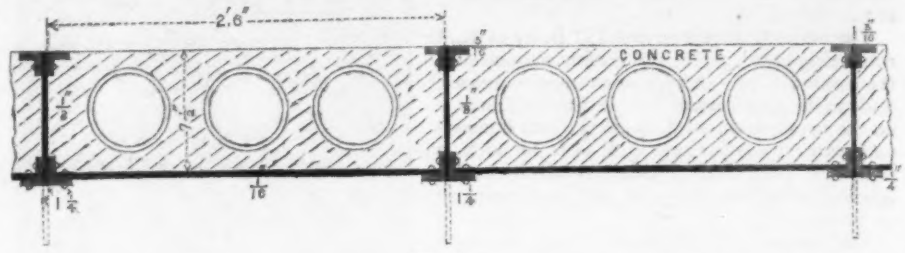


Fig. 4.

Fig. 4 shews the form of construction proposed by Mr. Beardmore, as evolved from the above and other experiments, for floors up to 18 feet span: it is constructed of vertical plates of sheet iron, with angle iron rivetted through. These light beams are then placed on the walls at the proper distances, and plates are rivetted to the bottom angle irons, and the whole filled in with concrete. Lightness may be obtained by introducing earthenware pipes, or this object may be effected by lengthening the vertical webs (as shown by dotted lines), when the floor may have a less thickness of concrete. The bottom plates, when liable to corrode, may be either of galvanised iron,* or iron coated with the peroxide paint patented by Mr. Welch.

The weight of the above floor, contrasted with one formed with cast-iron girders and half-brick arches, is shown in the following table:—

	Per square.	Per foot.	Span.	Depth of floor.
Floor formed with cast-iron beams and half-brick arches:—	lbs.	lbs.	feet.	inches.
Cast iron	1,008	10.1	15 to 18	14
Brick, &c.	5,824	58.2		
	6,832	68.3		
Fig. 3, as described above:—				
Wrought iron	600	6.0	15 to 18	7½
Concrete, with earthenware pipes	4,972	49.7		
	5,572	55.7		

The concrete used in all these experiments was formed of White's Portland cement and shingle, in proportions of from 1 and 6 to 1 and 9. The cost of such is less than good brickwork, and is remarkable from its setting properties and strength to resist compression.

The following is the inventor's summary of the apparent advantages of the proposed mode of construction:—

1. The necessity of the floor being fire-proof from its mode of construction.

2. The non-liability to disintegrate when exposed to fierce flame, as brick arches are known to do, in flakes.

3. That being of malleable iron, its cohesion could not be destroyed by sudden cooling when heated.

4. The small depth of this floor when contrasted with one of cast-iron of equal strength.

5. The absence of all lateral pressure on walls, and consequent necessity for tie bolts: and,

Lastly, that whereas in cast-iron constructions it is necessary to calculate the beams to bear not only the weight of the expected traffic on the floor, but also the weight of the brick arches themselves; in the proposed mode the concrete is not a weight independent of the floor which it is required to sustain, but a necessary element of the floor itself, thus rendering it nearly impossible to accumulate a great weight on any one spot, the floor being as it were one continuous beam, while with cast-iron girders the weight in the entire floor is necessarily thrown on them alone, which are consequently strained beyond the average strength required.

* We have received several serious statements relative to galvanised iron, to which we shall give attention.

NOTES IN THE PROVINCES.

THE prior's tomb, in the chancel of the church of St. Nicholas, Yarmouth, was opened on Monday week, and found to contain, in a white Purbeck marble coffin, a skeleton in good preservation, but evidently disturbed during a previous opening, it is supposed in 1650. No chalice, pastoral staff, &c., were found, though other traces of high ecclesiastical rank are said to have been noted.——"A house-agent in this town," says a Leicester paper, "has threatened to turn out every tenant of dwelling houses of which he has the management, who calls the attention of the inspectors of nuisances to any nuisance on the premises they occupy." We know, too, of instances in which tenants themselves refrain from complaint of nuisances from the mere anticipation of disagreeable contact with their landlords. It is to be hoped, however, that a little moral courage on the one hand, and a little forbearance on the other, will gradually work out much sanitary benefit. We can readily conceive that landlords may be much annoyed with complaints and expense without great reason, but where a wholesale threat like the above is uttered *in terrorem*, as a gag to tenants suffering from nuisances, it is also to be hoped, and indeed it is highly probable, that every house so tabooed from all cleansing process will become a "noted house" in its neighbourhood, into which tenants will be as afraid to enter as if it were haunted, or the scene of some recent slaughter; so that its landlord or agent may be at length induced to adopt as effectual means for turning *in* a tenant as those now threatened may, to his chagrin, *really* prove to be in turning him *out*.——Gloucester Cathedral lately stood in imminent peril, from fire in the college school-room over the chapter-room. One of the stoves is supposed to have set fire to the floor, which was much burnt, while books in flames fell into the chapter-room below.——The Mariners' Chapel at Gloucester was opened on Sunday week. The *Journal* describes it as a simple and appropriate structure. Mr. Jacques, of Gloucester, was the architect, and Mr. William Wingate, also of the same city, was the builder.——The Macclesfield committee for erection of baths and washhouse have selected the plan for a building at an estimated cost of about 1,200*l.*——St. John's Church, Hurst, was consecrated on Monday week. It is in the Early English style of 13th century. Internally it is about 69 feet long by about 43 feet wide, and divided into a nave and side aisles. It is without clerestory. The chancel is about 18 by 19 feet, with a vestry on the north side. In the west gable are two lofty lancet windows, with a quatrefoil light, surmounted by a plain bell turret, rising upwards of 50 feet from the ground. Near the south-west corner, on the south side, is a porch with high gabled roof. The nave pillars are of polished stone, the pews are low, and the roofs are open timbered stained in oak. There is a small gallery. Sittings in all 750. Mr. E. H. Shellard, of Manchester, was the architect, and Messrs. Eaton and Hallas, stone-masons, were the contractors. ——Styd Church, Ribchester, is to be renovated.——The Bradford council have formally discussed the smoke nuisance, and appointed a smoke committee.——The works connected with the new Mechanics' Institute, in the city of Durham, have been commenced; and the building will be finished, it is thought, in October next.——The large hospital to be

erected at Calside, Paisley, by the Abbey Board, has been contracted for, says the *Reformer's Gazette*, by the following tradesmen:—The mason-work by Mr. William Bowes, Paisley; joiner do., J. Lamb and Son, Greenock; slater do., Mr. Wm. Gillespie, Paisley; plumber do., Mr. J. Gilmour, Paisley; plaster do., Mr. Andrew Mitchell. Architect, Mr. J. Lamb.

RIGHT OF ARBITRATORS TO COPY DRAWINGS.

ROYAL ITALIAN OPERA-HOUSE, COVENT-GARDEN.

SIR,—In a personal matter I should best consult my own feelings in abstaining from asking for a space in your valuable columns, which you might otherwise fill with some subject of greater interest to your readers, but as an imputation has been made against my professional character in a charge brought against me by Mr. Albano, in your last week's journal, I have to request the favour of your insertion of a few words in reply.

Upon the matter of reference of Mr. Albano's accounts, in which I acted as umpire, it is impossible for me to say one word, but with regard to that part of Mr. Albano's letter complaining of my having, in his opinion, improperly caused traced copies of some of his drawings to be made, I beg to say that I am not disposed to enter on the discussion of the abstract right of an umpire to copy drawings produced in the course of any reference. In this case I acted under legal advice; and in the steps I have thought proper to take I have done nothing whatever derogatory to my character as an architect or a gentleman.—I am, Sir, &c., SAM. ANGELL.

18, Gower-street, Feb. 28, 1849.

WORKS AT BEVERLEY.

THE great window and the west end of the church of St. Mary being in an unsafe condition, it was resolved to have it restored. The cost of the restoration of the window, west front, doorway, and turrets, was estimated at about 1,000*l.*, and this the churchwardens hoped to effect by the funds of the church in two years, at the rate of 500*l.* a-year. To restore the window with common glass would have cost about 50*l.*; but Mr. Pugin proposed to put in superior stained glass for 300*l.*, and furnished a design, which was approved of by the parishioners and also by the Architectural Society. The necessary sum has been subscribed, and it is expected that the window will be restored and the painted glass put in during the present year. The subject of the design is our Saviour and the twelve apostles, with the patron saint of the church, filling the fourteen compartments of the window. One or more of the nave windows, it is expected, will be restored and decorated in a similar way.

The church of St. Mary, Beverley, as remarked by the correspondent to whom we are indebted for the above particulars "is well worth the attention of every one who admires or appreciates beautiful design and execution, and it is lamentable, here as elsewhere, to observe how little the decay of centuries has been arrested, and how dilapidated the structure has become. Here, however, there has been no daubing or defacing, and although there is much to restore there is little to pull down."

A site has been secured in the centre of the town for a national school, for the united parishes of St. Mary and St. Nicholas, and a design has been prepared by Mr. Pearson, of London, architect. Subscriptions are in progress to defray the cost, which is estimated at 571*l.* 10s., exclusive of site 455*l.* Of the whole sum, about 300*l.* only remains to be made up by contributions, in aid of which a bazaar is about to be held. The design is satisfactory.

TO RESTORE OAK.—A few weeks since a correspondent asked for something that would restore oak to its original whiteness. I have often used, with success, 2 oz. oxalic acid dissolved by friction in one quart of cold water. If the oak has been varnished it must be scraped clean before using the acid.—G. C.

ENCROACHMENT ON THE NEW ROAD.

SIR,—On looking into the current number of THE BUILDER, I was greatly surprised to find your correspondent, "C. E.," attacking the official referees on the ground, if I understand him rightly, that they, in common with the magistrates, were lending their aid to infringements of the Act of Parliament, 7 Geo. 3, to the extent of authorising buildings to be brought forward, so as to reduce the New Road to a less width than that statute prescribes and requires that it should be. A serious charge this: but your correspondent must surely be in error, as from all I know of the proceedings of this body, they have been found—to the sore discomfiture of many—to be strict conservators of the metropolitan streets and roads, be such streets and roads ever so wide; and I cannot help thinking that if the charge were to be inquired into, it would be found that when the Central Board "*defined* (found?) the line of frontage of two public buildings as being 50 feet back from the footway," they were doing their best to revive and uphold the Act of Parliament above mentioned, and that it would be further found that they have not, and moreover could not—if they had the will to do so—have given any decision or performed any other official act that could in any way lessen or abridge the provisions of that Act, and I should incline to the supposition that any *resolution* which they have come to (if they have come to any such resolution as "C. E." describes), must have reference to localities to which no statutory restrictions that would have the effect of imposing prohibitions against the erection of any inclosed projections before a house, other than the shop front of ordinary projection, do apply or ought to be applied: and it would appear strange, if the "two private buildings" referred to by "C. E." are being erected in the New Road in consequence of any such resolution, that similar erections, long ago devoutly wished, are not being consummated in the various other roads over which the Act, 7 Geo. 3, *has no control*, and which, as I had supposed, were lying under the ban of the official referees. SUUM CUIQUE.

Books.

The Year-Book of Facts in Science and Art, exhibiting the most important discoveries and improvements of the past Year. By JOHN TIMBS, Editor of "The Arcana of Science and Art." London. Bogue.

"THE industrious ants of science," said Lord Northampton, at a meeting of the British Association, "laboriously bring to her granaries their numerous though small additions; and, in truth, accumulate facts destined for materials for the greater minds, that reason and systematize." For many years has Mr. Timbs, who quotes this on his title-page, quietly played the ant, for the advantage of the public, when he might, if he had pleased, have taken a more assuming part; and much is due to him for the good he has done in that capacity. As the original editor of the old "Mirror," he is perhaps best known to many of our readers, and now in connection with the widely-circulated "Illustrated News," the public have weekly the advantage of his intelligence and ability without knowing it.

The present "Year-Book," which consists of valuable facts extracted from the periodicals of the day, not forgetting our own, which furnishes its full share, is illustrated with a portrait of Sir David Brewster, and forms an excellent present-book for the young of either sex, which they cannot open without picking up something useful.

Archæologia Hibernica. A Hand-Book of Irish Antiquities, Pagan and Christian: especially of such as are easy of access from the Irish Metropolis. By W. F. WAKEMAN. Dublin, M'Glashan; London, Orr and Co.

EVERY person interested in architectural antiquities, who visits Ireland, should possess himself of this little hand-book, which is nicely illustrated, and very sensibly put together. Nor is its value confined to those who are about to visit the green island; those who are not able to go there will find in it much to interest them. Ireland contains an extraordinary series of monuments, commencing from a very ancient date, which are much less known than they deserve to be.

Marshall's Index Ready Reckoner, for the Calculation of Wages. London: LONGMAN and Co.

THIS little work is especially adapted to the use of railway contractors and other parties employing a number of hands, and who require expedition in calculating the amount due to each. The calculations advance by quarters of a day, from one quarter to thirty days, at rates from one shilling to five shillings. A marginal index shows at once the page to be turned to, and adds much to the value of the work.

Taylor's Builders' Price-Book, corrected to the Year 1849. Edited by EDWARD CRESY, Architect. London: Taylor, Wellington-street.

THE new edition of this long-established price-book, edited by Mr. Cresy, contains, in addition to its ordinary information, the Public Health Act, in full; notes upon it, and a number of new tables of considerable value.

Mr. Taylor has published the Health Act separately in a convenient form.

Miscellanea.

THE SEWAGE MANURE COMPANY.—The secretary of this company wishes it to be stated that the resolution in their favour actually passed by the Commissioners of Sewers, is as follows:—"Resolved, that saving all the jurisdiction and rights of the Metropolitan Commission of Sewers, facilities be given to the Metropolitan Sewage Manure Company, for carrying out their experiments completely, by allowing them to take sewer water of a stronger quality than that chosen, viz., the Counters Creek Sewer." The secretary thinks that our report of the resolution come to by the Court of Sewers (p. 69 *ante*), is calculated to damage the company, and though we are disposed to think he greatly overrates the difference, we willingly give the company all the advantage which the words of the resolution may be to them. We shall be glad to find this company seriously at work. Anxious as we are to further every effort to prevent the future defilement of the Thames, and to turn the sewage of the metropolis to its proper use, we have never found ourselves able to advocate warmly the interests of this company. They have never appeared to see their way, and we very much doubt if they do so yet. We shall be glad to be undeceived.

THE CLOSED-DOOR BUSINESS OF THE METROPOLITAN COMMISSION OF SEWERS.—Sir: I am happy to find that the "hole and corner" proceedings of the new commission have attracted attention, and drawn forth the remarks contained in your last number. It certainly does appear strange that a body professing the most unbounded regard for the public interests, and having in their hands so large a sum of the public money, should so closely imitate the worst features of some of the former Commissions of Sewers, by transacting nearly the whole of their business, involving the outlay of several thousands of pounds, with closed doors. It is true, that the amount is mentioned in the open court required for certain works,—not for the sake of information, but merely to give it a formal legality, and this is done in so brief and hurried a manner, as to appear to the commissioners almost "like a thrice-told tale." No reason for it is given, no information is conveyed as to its necessity; but merely this or that "committee" recommend it. A late member of the House of Commons once remarked,—"If I wish a snug job to be done, give me a select committee." That this remark may not apply to the present Metropolitan Commission of Sewers is the earnest hope and desire of—

ONE AMONGST THEM.

*** A long debate on this subject took place at a meeting of the commissioners on the 1st instant, but we are forced to postpone report of it.

Projected Works.—Advertisements have been issued for tenders, by 7th inst., for the erection of the Printers' Almshouses; by 6th, for the erection of a farmery for 700 acres of land at Eldo House, Rougham, near Bury St. Edmund's; by a date not specified, for finishing a few third-rate houses near Mornington-crescent; also for the formation of a new road, 70 feet wide, from the Royal-crescent, Notting-hill, to Warwick-square, Kensington; by 28th inst., with plans, specifications, &c., for the erection of lodgings, and accommodation for the judges of assize, at Aylesbury; by April 7th, with plans, specifications, &c., for erection of gas-works, &c., at Aylsham, Norfolk; by 12th inst., for the erection and completion of the two chapels, cloisters, catacombs, &c., at the Leicester Cemetery; by 12th, for the erection of a workhouse at Fulham; by 13th, for executing the masonry, brickwork, and other works, and also the remainder of ironwork requisite for extending the Liverpool and Bury Railway to Tithebarn-street, Liverpool; by 19th, for the execution of the works required for the completion of the Knottingley branch of the York and North Midland Railway, a length of about three and a-quarter miles; by 19th, for the execution of the whole works necessary for the completion of the Bishop Auckland branch of the York, Newcastle, and Berwick Railway, and of the branch of same from Pensher to Sunderland, the former in two contracts of about 7½ miles each, and the latter in one contract of 7 miles in length; by 19th, for a supply of 30 fifteen-feet and 30 twelve-feet turntables for the same line; by 8th, for 200 goods trucks for the Eastern Counties; by 19th, for the supply of the various cisterns, pipes, taps, and apparatus for distributing water through the Birmingham Lunatic Asylum for paupers, and for the works connected with fitting and fixing the same; by a date not specified, for an iron tank, about 30 feet by 30 feet, and 4 or 6 feet deep, for St. John's Wood; by 10th April, for ironmongery,—by 20th inst., for crown and sheet glass and window lead,—and by same date, for iron-plate-workers' wares, all for the navy.

Competitions.—Plans, specifications, and estimates are wanted, from "architects and others," for lodgings and suitable accommodation for her Majesty's judges of assize at Aylesbury.——Twenty pounds and ten pounds are offered for the two best designs for a corn-market at Bedford.

Master and Man.—On the 13th, at the Town-hall, Nottingham, the following case was heard before the mayor and two other magistrates. Mr. Lonsdale, plasterer, having employed a man 50 miles from Nottingham, to whitewash some ceilings at stations upon the Sheffield and Lincoln railway, refused to pay him his charge without the certificate of the foreman of the works (George Clark). This the foreman refused to give, because the man had charged for twelve days' work during two weeks, whereas he had only worked eight days. A summons being granted against Mr. Lonsdale, the foreman attended the court, to prove to the magistrates the time that the man had worked, by book, showing the number of hours each day that he had worked. The magistrates arrived at the following decision:—that when the man had been at his work any part of a day, he was entitled to a full day's wages: two days the man admitted that he was not within 20 miles of his work, these were struck out of his account,—the bench allowing him ten days, instead of twelve days, which he had summoned his master for. Mr. Lonsdale to pay the costs (1*l.* 19s. 6d.).

England in an American's Eyes.—Mr. Ralph Emerson, in a lecture on England at Boston, after his recent visit, referred to the elements of that power which the English now hold, and have held for centuries. After looking at her manufactories, scattered all over the land, her commerce, her agriculture, her arts, and witnessing the stupendous results which have been wrought out, one is convinced, said he, that if he would see the best development of common sense (the standard sense), he must go to England to witness it. The land, in every part so like a garden, shews the triumph of labour; the fields look as if finished with the pencil, and not the plough. Every arable spot has been cultivated, and everything turned to the best possible use. England, he continued, is a huge mill, a grand hotel, where everything is provided to one's mind. On the railroads we ride twice as fast, and with one-half the shaking, that we do upon our roads. All England is a machine—everbody moves on a railway—no Englishman ever touches the ground. England has the best working climate in the world; it is never hot nor cold; their winter days are like our November days in the early part of the month. One of the few drawbacks which Mr. Emerson mentioned was the dark, dense smoke of many of the manufacturing towns, pervading and completely enveloping at times every surrounding object.

Builders and Building in London.—Our forefathers built houses singly; we build whole neighbourhoods. Belgravia, together with the new Bromptonian territories; Tiburnia, and a new district recently discovered by northern travellers, east of Camden Town, sprung up at once. All this has not happened and is not going on without hands, hence the Directory tells us of 406 architects, 779 builders, 431 bricklayers, 672 carpenters, 167 stone and marble masons, 66 plasterers, 400 plumbers, and 315 painters and glaziers. For the wholesale handy work of these artificers we beg to put in a plea against an imputation cast upon them by the author of "The Town," who says,—"In Elizabeth's time the London houses were still mostly of wood. We see remains of them in the Strand and Fleet-street, and in various parts of the city. They are like houses built of cards, one story projecting over the other; but unless there is something in the art of building, which may in future dispense with solidity, the modern houses will hardly be as lasting. People in the old ones could at least dance and make merry. Builders in former times did not spare their materials, nor introduce clauses in their leases against a jig. We fancy Elizabeth hearing of a builder who should introduce such a proviso against the health and merriment of her buxom subjects, and sending to him with a good round oath, to take a little less care of his purse, and more of his own neck." We have heard of such clauses, but believe they appertain to houses "run up" about the beginning of the present century, when the art of building was not so well understood as now. Although we do not deny that even some of the suburban contract-job villas are not built for eternity; nor, indeed, for perfect integrity after a severe equinox; yet the scientific researches of architects and builders into the relative ratios of the strength to the bulk of materials, and the frequent substitution of iron for wood, have enabled them to build most of the modern houses with equal stability, but with infinitely less clumsiness than their predecessors.—*Daily News.*

Pyro-Pneumatic Stove Grate.—We have several times said that the great *desideratum* in heating and ventilating is to get a constant supply of pure air admitted to the apartment at a proper temperature. Under the above title, Mr. Pierce, of Jermyn-street, has patented a stove-grate which proposes to supply this want. It has an open fire-place, and is lined with fire-lumps. Within these lumps are tubular air-ways, made to communicate with the external atmosphere, which, in thus passing into the apartment, is warmed without coming into contact with heated metal. The fire-clay lining makes it economical also: metallic linings are very wasteful.

Proposed Baths and Wash-houses for the Parishes of St. Margaret's and St. John's, Westminster.—A meeting of the vestrymen of the above parishes was held on Saturday, in the vestry-room of St. Margaret's Church, for the purpose of considering the propriety of erecting baths and wash-houses. Mr. Trollope occupied the chair. The Hon. C. J. Talbot moved the appointment of commissioners under the Act 9 and 10 Vict., for encouraging baths and wash-houses. The question was opposed by Mr. Sawyer and Mr. Sugg, and warmly supported by Mr. George Wilson, Mr. Whateley, Q.C., and Mr. Freeman, and carried by a majority of ten—there being nineteen for and nine against the motion. The following gentlemen were then appointed as the commissioners for the carrying out the Act in these parishes:—The Hon. J. C. Talbot, Lieut.-Colonel Short, Rev. J. Jennings (Rector of St. John's), Mr. George Wilson, Mr. Hawes, Mr. Trollope, and Mr. Burridge.

Freemasons of the Church.—A meeting of this society was held at 49, Great Marlborough-street, on February 13th, the Rev. George Pocock, LL.B., in the chair. Mr. J. Brown exhibited a chart illustrating the first principles of perspective, intended as a first step in perspective. It was the object in this drawing to place at one view the meaning of the terms used in this art, illustrated by such familiar examples as will render them easily understood by the young student, and place in a more simple light the mathematical rules which will afterwards be required. Mr. Pell, of Southwark, attended for the purpose of placing before the chapter a series of ornamental glass windows, manufactured by him on a patent principle, for halls, passages, and conservatories. Mr. Wilmshurst, upon this subject, offered some remarks, explaining the effect frequently obtained in windows by a very moderate use of colours, strengthening his observations by reference to examples in many continental cathedrals, and especially in that of Seville. Mr. William Smith Williams then read a paper on "The Importance of a Knowledge and Observance of the Principles of Art by Designers," to which we shall recur.

Value of Estates.—A short time ago the estates of Lord Suffield, at Middleton and Thornham, about 5 miles from Manchester on the one side, and equally distant from Rochdale on the other, were brought to the hammer at the Palatine Hotel, Manchester. The auctioneer described the capabilities and qualities of the property; after which some bids were made, the first of which was for 100,000*l.*, by Mr. Robert Ashton, cotton manufacturer, at Hyde. Ultimately, Mr. Fisher said that there was a reserve bid of 200,000*l.* on the property, and any advance on that of 1,000*l.* would be received, but otherwise the property would be withdrawn. The required offer not being made, the sale was abandoned, and it is understood the property will be offered in small lots. The estates are freehold, comprising about 3,000 acres, including plots suitable for building purposes at Middleton, and containing also some valuable seams of coal. The property also includes the valuable advowson of the rectory of Middleton, and the manorial rights. The present average rental has been about 10,000*l.* per annum, the average rental of the land being about 34s. 6d. per acre.—*Cheltenham Journal.*

How Low Contracts are carried out.—Sir: I have frequently been much edified by the information which you have afforded under the head "Blind Builders," and beg to offer for your use the following particulars of a job which was to have been executed for the Corporation of this city (Manchester). The work consisted of the excavation of about 9,000 yards of earthwork, the fair cost of which might probably be some 400*l.* There were about a dozen estimates tendered, varying from 115*l.* to 1,020*l.* The lowest was accepted, as is the custom in this neighbourhood. Some few "navvies" made their appearance, and slinked about as though they were arranging to begin in good earnest. This, however, proved to be a mere *ruse* to obtain a few weeks' credit at the beershops at which they located themselves. In order to support appearances, a few waggons were sent on the ground, but these, with the "navvies," mysteriously vanished before daybreak one fine morning, when it was found no further credit could be obtained, and neither have since been heard of. The job remains *in statu quo*.—O.

TO OUR READERS.

It has been suggested to us at various times that some of the best architectural subjects given in The Builder, if printed in a superior manner on good paper, with the accompanying descriptions, plans, &c., and issued periodically, would form a work that would be acceptable not only to those who are not buyers of The Builder, but to many who are,—the current engravings being often creased by the newsvendors, or otherwise injured. We are disposed to try the experiment, and to publish, in a neat wrapper, under the title, "Buildings and Monuments, Modern and Mediæval," about Eight Plates, with eight pages of letter-press, folio size, every second month, price half-a-crown. The first part would consist of Osborne House, with plan; Bridgewater House, plan and details; Church of St. Isaac, Petersburgh; Kensington Union Workhouse; Pembroke College, Oxford; the Liverpool Branch Bank; and the north porch of St. Mary Redcliffe, Bristol. Before determining upon the scheme, however, we should be glad to receive the names of such gentlemen as would be willing to become subscribers to the work.

MEETINGS OF SCIENTIFIC BODIES

Held during the ensuing week.

MONDAY, March 5.—Institute of Architects, 8 P.M.
TUESDAY, 6.—Institution of Civil Engineers, 8 P.M.
WEDNESDAY, 7.—Society of Arts, 8 P.M.
THURSDAY, 8.—Royal Society, 8½ P.M.; Society of Antiquaries, 8 P.M.
FRIDAY, 9.—Archæological Association (Anniversary).

TO CORRESPONDENTS.

"*Young Joiner.*"—"Quadrant" is the quarter of a circle. "A bottom step with *quadrant* end" means that the end, instead of forming an angle, is rounded to a quarter circle, and is a correct expression.

"*An Old Subscriber*" may apply to Mr. Geyelin, No. 12, Manchester-buildings, Westminster.

Postponed.—"Review of Mr. Poole's book," "Chelsea Hospital," "Parks and Approaches," Mr. Wornum's Lecture, &c.

Received.—"A Subscriber" (Millo), "J. C.," "D. Y." (we see no advantage in opening the question), "Anti-Iconoclast" (thanks; we will look), "W. J., jun.," "R. P." (Temple), "C. E.," "Footpad," "Anti-Pecksniff" (cannot prevent his employer from publishing the designs as his own, and, as it seems to us, ought not if he could. We may perhaps say a few words soon on the principle involved), "W. S. J.," "E. W. E. P.," "T. M.," "F. C. W.," "J. B. R.," "E. S." (Lewes), "C. H.," Essex (the burners are quite suitable: 59, Conduit-street, Regent-street), "E. B. J.," "R. H. S." (shall hear from us), "C. A. J.," "X. Y. Z.," "G. D.," "E. F. B.," "Antiquary," "W. C." (we do not consider ourselves bound to verify the correctness of every advertisement. On receipt of sufficient evidence, however, we would refuse admittance to the advertisement in question).—"The Principles of the Differential and Integral Calculus Simplified," by Thomas Tate (London, Longman and Co.), Dolman, Blackwood, &c., 1849; "Con Cregan," No. 3 (Orr), a spirited and well-written story.

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From the "Stamford Mercury," 19th January, 1849.

"BURGLARY.—On Friday night last, the offices of Mr. Wilkinson, solicitor, in Peterborough, were entered by thieves, who picked the lock of the door, and so obtained an entrance. They appeared to have first forced open a drawer of the table in Mr. W.'s office, whence they abstracted a few halfpence, and several keys belonging to the clerk's desks, with which they opened various boxes and cupboards. From one clerk's desk about 5s. in silver was taken, and a quantity of receipts belonging to the Phœnix Fire-office, most likely mistaken for other paper. Returning to Mr. W.'s office, the thieves ransacked the drawers, cupboards, tin boxes, and two portable desks, the contents of which they strewed over the floor. The chief point seems to have been a large iron chest in Mr. W.'s office: this at the time contained a considerable amount in cash, notes, gold and silver, which had been omitted to be paid into the bank during the day. The chest was one of Chubb's celebrated make: in this the burglars broke their picklocks, which were abstracted by means of a magnet the following morning. Having failed with the lock, they next tried to force open the lid; but here again they were foiled: the metal was too tough to break, and too solid to be wrenched or cut, and the thieves were baulked of their expected prize."

C. CHUBB and SON have received a letter from Mr. Wilkinson confirming the above statement, and expressing his gratification at the result.

57, St. Paul's Churchyard, London.

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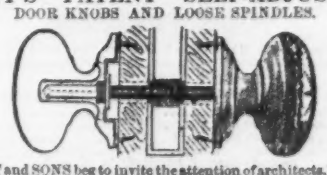

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PATENT TOUGHENED CAST-IRON. Messrs. GARDEN and MACANDREW beg to call the attention of Architects, Builders, Engineers, Iron-founders, &c., to the above description of IRON (Mr. Morries Stirling's patent), which, after numerous trials, experimental and practical, is found greatly to exceed all other cast-iron in tensile and transverse strength, as well as in resistance to crushing forces. Several of the most extensive iron masters have been licensed, and from them, or their brokers, the patent iron can be procured. Messrs. GARDEN and MACANDREW have always a stock of this iron in pigs, and are ready to execute orders to any extent on the shortest notice.

27, Queen-street, Cheapside, November, 1848

IRON FOUNDRY, 80, Goswell-street (late of Brick-lane, St. Luke's).—J. J. JONES having made great additions to his STOCK of PATTERNS, begs to inform the Trade, that he can now supply them with Plain and Ornamental Iron Columns Girders, Railings, Gates, Iron Coping, Balconies, Window Guards, Verandahs, Ornamental Staircase Panels, Iron Staircases, Tomb Enclosures, Trellis Panelling, Lamp and other Brackets, Cantilevers, Newel Bars, Water Closet Work, Area Gratings, Fly and other Wheels, Wheel Plates, &c.

BAKER'S OVEN WORK, Forge Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c., always in stock.

COWDREY'S IMPROVED SAFETY REVOLVING WOOD SHUTTER, without Hinges, and a very simple and easy method of raising and lowering, which far exceeds all others, being constructed on a more simple principle and with less expensive fittings, with neatness and accuracy. To be seen at the Maker's, No. 30, Fetter-lane, Fleet-street.

IRON FOUNDRY,
68, DRURY-LANE, and CHARLES-STREET, DRURY-LANE,
JOSEPH GLOVER,

Solicits the attention of the Trade to his extensive Stock of PATTERNS for CASTINGS of EVERY DESCRIPTION, consisting of those for every purpose, either structural or ornamental.

Wheel Pinion and Steam-Engine Patterns; Range Stove and Hot Plate Metal.

A stock of Rain-Water Pipes, Plain and O G Guttering, Air Bricks, Sash Weights, &c. &c.

A very superior description of Soot Door, particularly suitable for internal work, being perfectly secure, and not unsightly.

ESTIMATES given for IRON ROOFING and every description of Ironwork, complete to specification, and the work executed with every attention to quality and dispatch.

GLOVER'S FOUNDRY,
108, DRURY-LANE, and CHARLES-STREET.

IRON SHUTTERS.—The PATENT CONVEX REVOLVING IRON SHUTTERS are cheaper, twelve times stronger, work easier, cannot run down, and roll up in one-third less room than any other shutters made. Harcourt Quincey, Patentee.

CLARK and Co., Sole Manufacturers, and of IMPROVED DRAWN ORNAMENTAL METALLIC SASH BARS, ASTRAGALS, MOULDINGS, STALL-BOARD PLATES, &c. &c., in brass, copper, and zinc. WROUGHT-IRON GIRDERS, HOT-WATER APPARATUS, and metal works of every description connected with buildings. Steam engines, millwork, and machinery. CLARK and Co., Engineers, 256, Wapping. Models can be seen and every information obtained at 456, Oxford-street, and 4, Moorgate-street, City. Agent for Scotland, Mr. G. BRIGSTOCK, 17 George-street, Edinburgh.

SNOXELL'S PATENT SAFETY REVOLVING WOOD SHUTTERS, Manufactory, 96, REGENT-STREET and 121, CHANCERY-LANE. Patent sealed on the 6th day of February, 1845, for Fourteen Years, for Improvements in Revolving Shutters of WOOD and IRON, consisting of Six Methods of Raising and Lowering Shutters, without Machinery, and Two for Hinging and Sheathing the Edges of Wood Laths with Iron.—The Patentee having fixed up some hundreds, will feel pleased in forwarding the Testimonials of Architects, Principals of large Establishments, and others, having them now in use, which fully guarantees the Patentee in stating they are beyond dispute superior to any other Revolving Shutter for durability, security, and simplicity, without the use of cog-wheel worm and screw gear, or any other complicated machinery employed by other makers.

BUNNETT and CORPE, ENGINEERS, Patentees of

REVOLVING IRON AND WOOD SAFETY SHUTTERS,
and of
ORNAMENTAL METALLIC SASH BARS, MOULDINGS, &c.,
IN BRASS, COPPER, ZINC, &c.
FOR SHOP-FRONTS, SKYLIGHTS, &c.

Shop-fronts completely fitted and fixed in a superior style, either plain or ornamental, also glazed with best plate glass. Strong moulded stallboards handsomely engraved. Metal works and machinery of all kinds in connection with banking-houses, shops, warehouses, &c. &c.

B. and C. challenge competition as to either quality or price.

Designs furnished and estimates given.

IMPROVED PATENT BENCH AND FLOORING CRAMPS FOR BUILDERS.

SOLE LICENCEES FOR MARVIN and MOORE'S PATENT DIAGONAL GRATINGS.

Office of the Patentees, 28, Lombard-street, London; and at the Works, Deptford, Kent.

ZINC! ZINC! ZINC!— To Builders and Others.—F. HARLAND, of No. 1, Mount Etna, Mile-end Road, begs to call the attention of the above to the following List of his Prices for Zinc Work fixed complete:—

4 in. gutter	4d.	3 in. pipe	4½d.
3½ in. ditto	3½d.	2½ in. ditto	4d.
3 in. ditto	3d.	2 in. ditto	3½d.

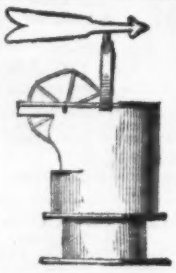
Cornice gutter, 5d. per foot, fixed.

Flats and verandahs covered, and cisterns lined, at 4d. per foot.

ZINC, from the VIEILLE MONTAGNE MINING COMPANY, is the purest known, free from alloy of iron, lead, or sulphur. It is supplied in spelter for brass founders, &c., and in sheets for ship sheathing and roofings of all kinds, and nails of all dimensions. It may be had at the following Agents', who have always a large stock in hand:—

London—Messrs. Charles Devaux and Co.; Mr. Charles Jack; Mr. William Skirrow.
Birmingham—Mr. John Barwell.
Liverpool—Messrs. R. Zwelchenbart and Co.
Manchester—Messrs. Richard Johnson and Brother.
Leeds—Messrs. J. G. and T. Heaps.
Hull—Messrs. J. Parker and Sons.
Newcastle-upon-Tyne—Mr. Benjamin Plummer.
Leith—Messrs. Robert Anderson and Co.
Glasgow—Messrs. A. G. Kidston and Co.
Bristol—Messrs. Morgan McArthur and Co.
Plymouth—Messrs. Luscombe, Driscoll, and Co.
Southampton—Mr. W. J. Lefeuvre.
Yarmouth—Messrs. John Shelley and Co.

Zinc from 20 to 24 oz. per square foot is generally used for roofings, which come at least one-third cheaper than slate coverings; and the ship sheathing, which lasts from five to six years, comes two-thirds cheaper than copper or yellow metal. And if the zinc coverings are made of the Vieille Montagne Zinc, and under the superintendence of Mr. Geyelin, the surveyor of the Company (for which no charge whatever is made), a guarantee of ten years will be given of its durability.—For further particulars and prices, apply to Mr. H. F. SCHMOLL, General Agent for England, at the Company's Offices, No. 12, Manchester-buildings, Westminster-bridge, London.



SIR HENRY HART'S
CHIMNEY PUMP,
FOR THE
CURE OF SMOKY CHIMNEYS,

and the constant ventilation of apartments. It has been in successful use at Greenwich Hospital for several months.

SOLE AGENTS.

BENHAM and SONS, 19, Wigmore-street, Cavendish-square, and G. and J. DEANE, opening to the Monument, London Bridge.

A liberal discount to Ironmongers and Builders.

DR. ARNOTT'S VALVES for thoroughly VENTILATING APARTMENTS of every description. F. EDWARDS having had the advantage of making them under the immediate direction and patronage of Dr. Arnott, enables him to present the public with Valves of the most approved principle for general use. Prices from 7s. 6d. to 20s. and upwards. A prospectus, containing every information, to be had on application to F. EDWARDS, 42, Poland-street, Oxford-street, London.

DR. ARNOTT'S VENTILATING CHIMNEY VALVE.

For carrying off Heated and Impure Air from Bed-rooms Sitting-rooms, Counting-houses, and Apartments generally.

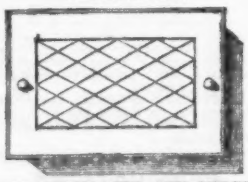
LIST OF PRICES.

	First size, 11 by 8.	Second size, 16 by 9
Plain Iron Valve	7 6	12 0
Bronzed and Leathered	9 0	14 0
Japanned, white with Gold lines	15 0	21 0
Brass Front.....	17 0	24 0

Packing Cases (if required), 1s. 3d. each.

Manufactured by HART and SONS, 53, 54, 55, Wych-street Strand, London.

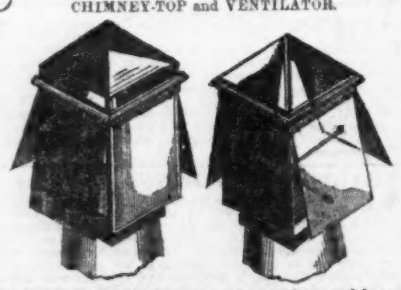
IMPROVED SELF-ACTING CHIMNEY VENTILATORS.



FOR CARRYING OFF HEATED AND IMPURE AIR from drawing-rooms, sitting-rooms, bed-rooms, nurseries, offices, &c. &c., from 3s. each.—BURT and POTTS, Manufacturers and Ironmongers, 65, York-street, Westminster, London.

Stoves, ranges, rain-water pipes, gutters, and builders' ironmongery, as low as any house in London. Delivered free within 5 miles.

CABLE'S FUMI PORTE; or, improved CHIMNEY-TOP and VENTILATOR.



The best and cheapest invention hitherto discovered for curing smoky chimneys. Sold by the Inventor, at his agents', Lawrence and Co.'s, 55, Parliament-street, London.

N.B. Licences granted to the trade, by Labels at per dozen, according to circumstances.

LANDLORDS and others having RESI- DENCES and ESTATES to be LET or SOLD are requested to forward full particulars to Thomas Fox for entry upon his register, free of cost. From the fact of his list of requirements for his numerous connections being at the present time very extensive, he is fully justified in stating that he possesses an almost certain means of at once introducing an immediate purchaser or tenant for anything of at all a desirable nature. No charge will be made unless the results prove successful. Valuations of every description of every description of real or personal property for sale. Administration or assignment promptly effected. The management of household estates conducted with strict punctuality in accounts and settlements, by THOMAS FOX, Upholsterer and Estate Agent, 93, Bishopsgate-street Within.

By Her Majesty's Royal Letters Patent.

GLASS VENTILATORS FOR WINDOWS.

BAILLIE'S PATENT Transparent SLIDE VENTILATORS, supplied at a reduction of 40 per cent. from the original Tariff. Their extensive and successful application to public offices, bed-rooms, and the cure of smoky chimneys, prove their great utility. To be seen in action at Edward Baillie's Stained Glass Works, 12 a Cumberland Market, Regent's Park.

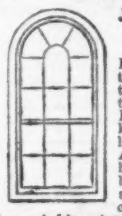
Designs and estimates for church and ornamental windows forwarded on application as above, where specimens in every style are on view.

SASHES and FRAMES, DOORS, &c.— HENRY WARLAND, Commercial-place, City-road, respectfully informs the building public, that he can supply the above articles at the following rates:—1¼ ovolo sashes and frames, 9d. per foot sup.; 1½ four-panel doors, moulded both sides, 9½d. See list of prices, to be had on application. A stock of doors on hand.

CHAS. WM. WATERLOW, MANUFACTURER

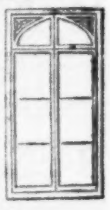
of Sashes and Frames, and Joiner to the Trade, 121, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.

SHOP FRONTS, SASHES and FRAMES, DOORS, &c., MADE FOR THE TRADE.



JOHNSON and PASK,
1, Amwell-street, Clerkenwell, near the New River Head,

Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.



CHEAP ORNAMENTAL GLASS.—I beg to inform my friends and the public, that I have now completed a new ENGINE, and, owing to the facility with which I can execute orders, I am enabled to reduce my former prices considerably. The prices are now from ONE SHILLING PER FOOT SUP., and borders from SIXPENCE PER FOOT RUN. A large quantity of the cheapest patterns always in stock. Embossing and painted work on the most moderate terms.—CHARLES LONG, No. 1, King-street, Baker-street, Portman-square.—Cash only.

E. and W. H. JACKSON beg to call the attention of Builders and the trade to the reduced prices of their PATENT PLATE GLASS, which, from its cheapness, is now superseding crown in all respectable dwelling-houses. BRITISH and ROUGH PLATE, CROWN, SHEET, STAINED, and ORNAMENTAL GLASS, supplied of the best manufacture, and at the lowest terms. List of prices, estimates, and every information can be had on application at their warehouse, 313, Oxford-street.

THE UNION PLATE GLASS COMPANY beg to call the attention of architects, surveyors, builders, large consumers, and the trade generally, to the quality, colour, and substance of their highly-finished glass, and as the discounts vary according to size, they prefer giving a special estimate for each quantity required. To encourage the use of Plate Glass for glazing purposes, the price is considerably reduced, which will, for its durability and appearance, insure the preference to any other description.

ROUGH PLATE GLASS supplied for skylights, warehouses, workshops, and flooring, 3-8ths, ½, ¾, and 1 inch thick.

London Warehouse, 99, Hatton-garden, Holborn.

H. CHRISTIE, Agent.

SOHO PLATE, CROWN, SHEET, PATENT PLATE, ORNAMENTAL, and LOOKING-GLASS MANUFACTORY, 26, Soho-square, London.

PLATE GLASS.—Architects, builders, and the trade generally will find the stock of plate-glass in this department of the very best colour and finish; and in order to meet and encourage the increasing demand for glazing qualities, a special price will be given for all orders upon application.

LOOKING-GLASS AND FRAME DEPARTMENT.—Upholsterers and carvers and gilders will find a large and very valuable stock of carved and composition frames, &c., fitted with silvered plate glass, and ready for immediate delivery (either gilt or ungilt). The stock of mahogany dressing and cheval glasses is also most extensive, and of the very best quality and design.

PATENT PLATE GLASS.—A reduction of 40 per cent. has been made upon this glass, so well adapted for glazing houses of the first-class, and for prints, &c. The new tariff of prices is ready, and will be forwarded upon application.

ORNAMENTAL GLASS.—A very choice stock of superior designs is constantly kept ready for delivery,—the quotations ranging from 1s. 3d. per super foot.

CROWN, SHEET, AND HORTICULTURAL GLASS.—A printed card of prices for these descriptions of glass, which are delivered in crates as manufactured, or cut to sizes ordered, can be had upon application.

WINDOW GLASS. — THOMAS MILLINGTON solicits an inspection of the different GLASSES he has now in stock, the qualities of which will found to be very superior.—87, Bishopsgate-street, Without.

NEW TARIFF.—Sheet in various large dimensions delivered free in London.

Common in 100 feet cases			30s. 0d.
Do.	200	do.	38s. 0d.
Thirds	200	do.	42s. 6d.
Seconds	200	do.	66s. 8d.
Best (very superior)		do.	100s. 0d.

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS in sizes not exceeding 5 feet superficial.

¼ thick.....	1s. 0d.	½ inch.....	2s. 0d.
3-8th inch	1s. 2d.	1 inch.....	3s. 0d. per foot.
¼ inch	1s. 6d.		

PATENT ROUGH PLATE TILES.

¼ thick.....	0s. 11d.	3-8th inch..	1s. 7d.
½ inch.....	1s. 3d.	¾ inch.....	2s. 0d. each.

GLASS DOMES for SKYLIGHTS, from 15 to 50 inches in diameter. These are well worth notice.

C C C Crown per crate 18 tables			£1 16 0
C C	do.	do.	2 0 0
Fourths	do.	do.	2 7 0
Thirds	do.	do.	3 2 6

Large Crown Squares in 100 feet boxes ..... 2½d. per foot.
8 by 6 — 10 by 8 do ..... 2d. do.
Very superior Plate for Pictures and Windows, averaging 26s. from 1s. 6d. per foot upwards.